

Appendix A: Comments and Responses

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Appendix A. Comments and Responses

1. Comments on the Preliminary Best Interest Finding

This section of the appendix includes a summary of comments regarding Sale 87, North Slope Areawide Preliminary Best Interest Finding, and the ADNDR response to those comments.

Index of comments received following the Preliminary Best Interest Finding

Date	Organization	Author	Origin
9/16/97	(RA)	Rosemary Ahtuanguaruak	Nuiqsut
10/6/97	Anadarko Petroleum Corporation (ADK)	Todd L. Liebl	Anchorage
10/17/97	Arco Alaska Inc. (ARCO)	Michael A. Richter	Anchorage
10/20/97	ADF&G, Habitat & Restoration Division (ADF&G)	Alvin A. Ott	Fairbanks
10/20/97	Alaska Oil and Gas Association (AOGA)	Judith M. Brady	Anchorage
10/20/97	BP Exploration (Alaska) Inc. (BPX)	E.P. Zseleccky	Anchorage
10/20/97	North Slope Borough, Mayor's Office (NSB)	Benjamin P. Nageak	Barrow
10/20/97	Northern Alaska Environmental Center, Alaska Center for the Environment, Greenpeace, Oilwatch Alaska (NAGO)	Sara Callaghan, Kevin Harun, Melanie Duchin, Jim Sykes	Anchorage
10/20/97	US Fish & Wildlife Service (FWS)	Patrick J. Sousa	Fairbanks
11/5/97	City of Nuiqsut	Rosemary Ahtuanguaruak	Nuiqsut
12/4/97	North Slope Borough, Mayor's Office (NSB)	Benjamin P. Nageak	Barrow
12/4/97	Alaska Eskimo Whaling Commission	Maggie Ahmaogak	Barrow
12/5/97	Trustees for Alaska	Peter Van Tuyn	Anchorage

The following comments respond to the Sale 87 Preliminary Best Interest Finding. Many comments pertain specifically to mitigation measures, formerly called lease sale stipulations or plan of operations permit terms. Other comments raise issues of concern regarding this areawide lease sale. Major issues considered material to the Director's decision are presented in Chapter Seven along with a complete list of mitigation measures and lessee advisories. Issues are addressed in this appendix and references to applicable mitigation measures and text are provided in the following responses.

All comments have been considered carefully. Mitigation measures and lessee advisories in place for this sale represent consensus reached among state resource agencies (ADNR, ADF&G, ADEC) and the North Slope Borough during the ACMP consistency determination process. Prior to each annual sale, ADNR will request new and significant information that has become available since the previous lease sale. Based on this information, ADNR may supplement the finding prior to holding the next annual sale. New information could result in the inclusion of additional mitigation measures. Sale 87 is scheduled to be held in June 24, 1998. The current leasing schedule calls for other North Slope areawide sales to be held each February in 1999, 2000, and 2001.

State Agencies

ADF&G, Habitat & Restoration Division, Alvin A. Ott, 10/20/97	
Recommends there be no surface occupancy within one-half mile of identified Dolly Varden overwintering and spawning areas in the Sale 87 area. Streams containing known Dolly Varden overwintering and spawning areas include the Kavik, Canning, and Shaviovik Rivers. Exploration and development in these discrete areas may adversely affect the water quality or quantity necessary to ensure continued survival of Dolly Varden populations in these areas.	To protect Dolly Varden overwintering and spawning habitat, measure 21 has been modified by adding a new paragraph: b. No facilities will be sited within one-half mile of identified Dolly Varden both overwintering/spawning areas on the Kavik, Canning and Shaviovik Rivers. Road and pipeline crossings will not be sited within these buffers unless the Director, after consulting ADF&G, determines that such facility restrictions are not feasible or prudent.
Not all streams on the North Slope have been adequately surveyed to determine Dolly Varden presence, nor is the full extent of the distribution of their spawning and overwintering areas known. Should additional spawning or overwintering areas be discovered within the lease area, the department will request the no surface occupancy provision be applied to these areas during plan of operations review.	Comment noted.
Steller's Eider should be added to the Lessee Advisory 5a, as it has been recently added to the list of threatened and endangered species.	The following language has been added to Lessee Advisory 5a: "Lessees shall comply with the Recommended Protection Measures for Steller's Eider once they are developed by the USFWS."
Mitigation Measure 9 should be modified to exclude the development of mine sites and use of gravel for exploration purposes. The measure should be updated to reflect the current oilfield practice of using ice pads and ice roads for exploration.	Current operating practices on the North Slope are to avoid gravel mining in support of exploration. DO&G supports this approach. However, DO&G does not want to totally eliminate gravel mining in support of exploration as a possible option.

Federal Agencies

US Fish & Wildlife Service, Northern Alaska Ecological Services, Patrick J. Sousa, 10/20/97	
Concerned about the Arctic National Wildlife Refuge. The Arctic Refuge Comprehensive Conservation Plan prohibits development of oil and gas support facilities on the Refuge. Potential lessees should be clearly informed that oil and gas exploration and development, or any associated infrastructure, is not authorized on adjacent Refuge lands.	Comment noted. The Arctic National Wildlife Refuge is outside of the Sale 87 area.

<p>The following comments pertain to our comments submitted to the DO&G, dated February 28, 1997: Although ADNR has referenced the literature regarding Central Arctic Herd calving success, the request to delete critical calving and post-calving areas was apparently not considered.</p>	<p>Calving and post-calving areas appear to change location over time. Deletion of these areas today may not be relevant in the future when leases are likely to be developed. Furthermore, DO&G does not believe that any tract deletions are necessary. Sale 87 measures and lessee advisories, and the opportunity to impose additional restrictions during plan of operations review, provide sufficient protection for critical caribou calving and post-calving areas.</p>
<p>Identification of “key wetlands” is inadequate. Although ADNR did identify key wetlands as “those wetlands that are important to fish, waterfowl, and shorebirds because of their high value or scarcity in the region” (see page 7-3), categories of wetlands should be clarified.</p>	<p>Several Sale 87 measures protect wetland habitats. Some wetland classifications are discussed in Chapter Three. Key wetlands are identified at the project proposal phase after initial habitat surveys and wildlife studies are complete. ADF&G, USFWS, COE, EPA, and NOAA identify sensitive habitats and natural resources at that time and ensure that they will be protected. Lessee Advisory 3 states that the wetlands referred to in Mitigation Measures 5, and 19 are based on a classification system developed by Bergman et al (USF&WS Resource Publication 129, 1977 Waterbirds and Their Wetland Resources in Relation to Oil Development at Storkersen Point, Alaska). Lessees are also advised that the state may adopt or approve the use of an alternative wetlands classification system in the future, however, the protective nature of the wetlands mitigation measures developed for this and other oil and gas lease sales will remain consistent regardless of the wetlands classification ultimately selected.</p>
<p>As previously requested, Measure 5 should be revised to include a requirement that facilities sited in key wetlands “will be sited, designed, constructed, and maintained in a manner that will preserve natural hydrological patterns.” This revision was not incorporated into the preliminary finding. Lessees should be required to follow best-construction methods to ensure the maintenance of cross drainage and sheet flow in all wetlands (not just streams) on the Arctic Coastal Plain.</p>	<p>First, all operators, regardless of the lease, are required to use the best methods available. Second, lease sale measures must be written so as to be flexible enough to accommodate change. Sale 87 must be consistent with the ACMP, and 6 AAC 80.130 requires that wetlands and tideflats be managed so as to assure adequate water flow, nutrients, and oxygen levels and avoid adverse effects on natural drainage patterns, the destruction of important habitat, and the discharge of toxic substances. Best construction practices are considered at the plan of operations stage, when specific activities or facilities are proposed for specific sites.</p>
<p>ADNR did not further evaluate our recommendation (from Sale 80) that lessees consider aerial surveys of a proposed development area to determine the local status of the threatened Spectacled eider. This is unfortunate because these surveys are both cost-effective (relative to expensive ground surveys) and critical relative to defining the aerial extent of breeding.</p>	<p>This proposed change is unnecessary. Determination of the local status of spectacled eider and other threatened or endangered species is done at the project proposal phase as required by the Endangered Species Act.</p>

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Regarding the discussion of Meehan and Jennings (page 3-3), what is meant by “key bird species,” i.e., is this based on numbers, economic value, or subsistence value? Suggest review and incorporation of Derksen et al. 1981 (Use of wetland habitats by birds in the National Petroleum Reserve-Alaska. U.S. DOI, FWS, Resource Publication No. 141, Washington).	Key bird species are defined by state and federal agencies during the permit application and approval process at the plan of operations permit phase. Determinations are based on all the cited values: for their value to the ecosystem, and for their economic and subsistence value. Although NPRA is outside of the Sale 87 region, DO&G is reviewing the referenced publication for data that may be applicable to the sale area.
The Nelchina caribou herd was not defined relative to other caribou herds on page 3-13. How does this herd relate to the CAH on which comparisons are based?	The Nelchina herd was used as an example to illustrate the concept of carrying capacity, and the reality posed to wildlife managers. Carrying capacity is the maximum herd size that a given geographic range can support. Without controlled harvesting, grazing or foraging herds can overpopulate their range in times when conditions are good and food is abundant. Severe winters, deep snow, delayed spring thaw, or bad insect years can reduce calving success. Reduced calving success, coupled with mortality from starvation and increased numbers of predators, can cause the size of a herd to drop sharply. Fish and shellfish populations are also subject to population “crashes.”
The spectacled eider should be added to the list of species identified in Mitigation Measure 19.	The spectacled eider and Steller’s eider have been added to the list of species in measure 19.

Local Government

Rosemary Ahtuanguaruak, 9/16/97	
<p>Proposed Sale 87 is detrimental to the people of Nuiqsut. The many animals of the land and sea will suffer excessively from stresses exerted upon them by oil and gas development. The sensitive ecosystem has had studies done to prove development can occur, but the dwindling numbers of animals in the region proves the harm.</p>	<p>While the community of Nuiqsut may experience acute impacts associated with development, such as impacts from the Alpine Development Project, adverse effects on fish, wildlife and their habitats and human uses are not expected to be long-term. Nuiqsut is likely to also experience positive impacts of development in the form of job opportunities and revenues and services provided by the NSB (which receives about \$225 million annually in oil and gas property taxes). In addition to NSB municipal code, ACMP reviews, and federal wildlife protection laws, mitigation measures ensure that natural resource values will be maintained. Nuiqsut residents have reported recent declines in moose and fish abundance. DO&G has not found any evidence linking oil and gas activities to declining numbers of North Slope wildlife populations. Additionally, animal populations commonly rise and fall in natural cycles.</p> <p>As a balancing agency, DO&G believes that oil and gas development can occur in a manner that will protect the ecosystem and the people of Nuiqsut. The best interest finding recognizes the extraordinary environmental values of the North Slope. In addition to NSB municipal code, ACMP reviews, and federal wildlife protection laws, mitigation measures ensure that natural resource values will be maintained. Virtually all of Sale 87 mitigation measures have been designed to reduce stress on area fish and wildlife resources and habitats, as well as subsistence hunting and fishing.</p>

<p>The lives that will be greatest affected are the few living year-round. The only benefit will be the mighty dollar that will go to the state and the impact will be felt by the few people whose faces you'll never see and cries of hunger you'll never hear. Impact funds will not be earmarked for us. When our natural food sources have moved away due to the impact, who will listen and get us the help we already have demonstrated that we need as a result of existing development?</p>	<p>ADNR agrees that effects of development projects would be felt most by local year-round residents. The state does not expect post-Sale 87 activities to result in population declines of subsistence resources, nor is it likely that post-sale activities will affect behavior and migration patterns of sale area wildlife resources. Numerous mitigation measures have been imposed to ensure maintenance of fish and wildlife populations as well as subsistence opportunities. Benefits from lease sale development include potential employment opportunities and possible increases in corporate dividends and Alaska Permanent Fund dividends. As noted above, the NSB receives substantial revenues from tax assessments on oil and gas property. Public services supplied by the NSB are made possible via oil and gas property taxes. Additionally, the NSB municipalities receive funding and program support from the state.</p> <p>Impact funds are petroleum-derived revenues set aside by Congress or the state legislature for communities experiencing direct impacts of leasing. For example, under a program created by the legislature in 1986, a portion of revenues derived from leasing efforts in the NPRA are set aside for NSB communities directly impacted by NPRA leasing. This program is administered by ADC&RA. There is presently no impact fund program associated with the state leasing program. Such a program could be created by the legislature, private industry sources, federal sources, or a combination.</p>
<p>When development does occur and jobs are out of reach of our residents, as most of the jobs have been, what are we to do to provide for our families without the land and sea?</p>	<p>Holding the lease sale does not necessarily mean that exploration and development will automatically follow, and, in the event exploration and development does take place, ADNR aims to protect the environment through the enforcement of carefully thought-out mitigation measures, laws and regulations. Municipalities and boroughs also use a consensus process to draft development guidelines into local ordinance. The resources of the land and the sea will continue to be available to the people who depend upon them. In addition, the state, through Mitigation Measure 13, attempts to ensure that residents get are considered for jobs by encouraging prospective lessees to hire local and Alaska residents and contractors for work performed in the lease area. Many companies have programs to provide training in skills applicable to working in the oil industry.</p>

North Slope Borough, Office of the Mayor, Benjamin P. Nageak, 10/20/97	
<p>The NSB is generally supportive of the concept of areawide leasing as a means to reduce the burden of continually reviewing a patchwork of non-contiguous areas proposed for lease within a larger region. However, as stated in the Borough's 1996 comments, the interval between repetitive lease sales should be greater than one year, and the interval of 10 years between best interest findings is too great.</p>	<p>The areawide leasing bill that was unanimously passed by the legislature allows lease sales to be held each year, and allows an interval of ten years between best interest findings. However, ADNDR will issue a call for new information every year, and if substantial new information is indicated, will revisit the best interest finding process. The call for new information will be sent to the North Slope mailing list, which includes the NSB and other communities as well as the public.</p>
<p>With a proposed sale area of such great size, and given that this could be the only comprehensive best interest finding developed for the area over the next ten years, the state appears to have made only the minimum efforts required to involve the North Slope public in the decision-making process. In preparation for the first Cook Inlet Areawide sale, the state convened a stakeholders task force to assist in the development of that sale's preliminary finding. No similar group of local residents was formed to contribute to the development of the Sale 87 preliminary finding, and no formal or informal North Slope community public meetings of any kind have been held to discuss this new leasing process. A single informational meeting was scheduled in Nuiqsut on October 9th, but has been rescheduled for November 13th, after the close of the comment period on the preliminary finding. Though the state acknowledges that post-lease sale 87 activities could affect subsistence in Nuiqsut, Barrow, Kaktovik, and perhaps Anaktuvuk Pass, only the single informational meeting in Nuiqsut has been scheduled. Recommends that the state hold hearings and take public testimony in the North Slope communities of Nuiqsut, barrow, Kaktovik, and Anaktuvuk Pass before a final best interest finding is prepared.</p>	<p>The Cook Inlet Stakeholders' process was an experiment and was not intended to be utilized for all lease sales. ADNDR made a substantial effort to schedule a public meeting/teleconference for Sale 87. This meeting was to be held in Nuiqsut, with teleconferences to Barrow, Kaktovik and Anaktuvuk Pass. The meeting was originally scheduled for October 9, 1997, but had to be postponed until November 13 because the commissioner of ADNDR was very ill. The November 13 meeting was cancelled following a tragic airplane crash in Barrow on November 9. Because of the commissioner's schedule, and upcoming holidays, ADNDR suggested a meeting on December 3 or 4. This conflicted with a Kuukpik Corporation retreat. With village leaders absent, the commissioner decided it was best not to schedule a meeting at that time. Because ADNDR could not schedule a meeting date all parties could agree to, it extended the public comment period for Sale 87.</p>
<p>Concerned with the use of explosives in connection with industrial activities on the North Slope. Residents have repeatedly testified about the lethal or otherwise harmful effects of explosives they have observed on the area's fish and wildlife. We had expressed this concern during other recently proposed lease sales, and felt confident that given the willingness of industry representatives to concede that they had no intention of using explosives in their operations, the state would ban their use. Nowhere in the document is a justification or explanation provided for the continued use of explosives in connection with seismic or other industry operations. The borough renews its recommendation that the use of explosives be prohibited.</p>	<p>As a result of the NSB's elevation of this issue, mitigation measure 1 has been modified to require lessees to consult with the NSB prior to proposing the use of explosives for seismic surveys. The director may approve the use of explosives for seismic surveys after consulting with the NSB. The discussion of explosives in the best interest finding has been expanded (See Chapter 5).</p>

Appendix A: Comments and Responses

Though Mitigation Measure 14a offers protection for bowhead whales and minimizes disruption of subsistence activities, the whale, its use of offshore areas adjacent to the proposed sale area, and subsistence whaling are not adequately discussed in the document.	A discussion of subsistence whaling has been added to Chapter Four of the finding. As noted in Chapter 5, Sale 87 is expected to have little or no effect on subsistence whaling. Subsistence whaling issues will be addressed in the upcoming proposed Beaufort Sea areawide sale.
Page 4-2 of the preliminary finding should more accurately describe the NSB and its communities. Communities other than Barrow within its borders are Point Hope, Point Lay, Wainwright, Atkasuk, Nuiqsut, Kaktovik, and Anaktuvuk Pass. Deadhorse should be described as an industry support community distinct in nature from our villages. Also, it is misleading to imply on page 4-3 that dogsleds are a widely used means of transportation in winter.	Comment appreciated. The finding has been amended.

<p>In recent years the state has professed a desire to work with the Minerals Management Service to develop mitigation measures which are consistent across state and federal jurisdictions. In keeping with this desire, the borough recommends the state adopt for Sale 87 a mitigation measure similar to MMS Sale 170 Stipulation No. 5. This stipulation requires that a lessee show in its exploration or development and production plan how its activities in combination with other activities in the area, will be scheduled and located to prevent unreasonable conflicts with subsistence activities.</p>	<p>As a result of the Sale 86 (Central Beaufort Sea) ACMP process, mitigation measure 14 was modified to include language contained in MMS Sale 170 Stipulation No. 5. This measure was again modified to fit the Sale 87 area. The NSB elevated this issue, and proposed additional language. A consensus was reached among the resource agencies and the NSB, and measure 14 has been amended as follows as a result:</p> <p>14. a. Exploration, development or production operations shall be conducted in a manner that prevents unreasonable conflicts between lease related activities and subsistence activities. In enforcing this mitigation measure the division, during review of plans of operation, will work with other agencies and the public to assure that potential conflicts are identified and avoided to the fullest extent possible. Available options include alternative site selection, requiring directional drilling, seismic and threshold depth restrictions, subsea completion techniques, seasonal drilling restrictions, and the use of other technologies deemed appropriate by the Director.</p> <p>b. Prior to submitting a plan of operations for both onshore and offshore activities which have the potential to disrupt subsistence activities, the lessee shall consult with the potentially affected subsistence communities and the North Slope Borough (NSB) (collectively “parties) to discuss potential conflicts with the siting, timing, and methods of proposed operations and safeguards or mitigating measures which could be implemented by the operator to prevent unreasonable conflicts. The parties shall also discuss the reasonably foreseeable effect on subsistence activities of any other operations in the area that they know will occur during the lessee’s proposed operations. Through this consultation, the lessee shall make reasonable efforts to assure that exploration, development, and production activities are compatible with subsistence hunting and fishing activities and will not result in unreasonable interference with subsistence harvests.</p> <p>c. A discussion of resolutions reached or not reached during the consultation process and plans for continued consultation shall be included in the plan of operations. The lessee shall identify who participated in the consultation and send copies of the plan to participating communities and the NSB when it is submitted to the division.</p>
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	<p>d. If the parties cannot agree, then any of them may request the commissioner of DNR or his designee to assemble the parties. The commissioner may assemble the parties or take other measures to resolve conflicts among the parties.</p> <p>e. The lessee shall notify the director of all concerns expressed by subsistence hunters during operations and of steps taken to address such concerns.</p> <p>f. Lease-related use will be restricted when the Director determines it is necessary to prevent unreasonable conflicts with subsistence harvests.</p>
<p>Nuiqsut residents' concern over the increasing incidence of respiratory disorders in that community in recent years is not adequately discussed in the finding. Residents report occasional emission clouds moving in the direction of the community. The final finding should discuss in appropriate detail the potential effects of periodic air emissions from the oil fields, including natural gas emissions and flares, especially on Nuiqsut.</p>	<p>Air quality throughout the proposed sale area is very good, with concentrations of regulated pollutants well below the maximum allowed under National Ambient Air Quality Standards designed to protect human health. In order to ensure that air quality standards are maintained, additional limitations on nitrogen dioxide, sulfur dioxide, and total-suspended-particulate matter are imposed on industrial sources under the provisions of the Prevention of Significant Deterioration Program, administered by EPA. Most atmospheric contaminants do not originate in the Arctic, but likely result from long-range transport from lower latitudes. ADEC's Air Quality Maintenance program controls significant, stationary sources of air contaminants to protect and enhance air quality and abate impacts on public health and the environment. The agency issues operating permits to existing major facilities incorporating all applicable requirements, and issues construction permits to new large facilities and for expansions of existing facilities.</p> <p>Reasonably foreseeable cumulative effects of this sale on air quality is discussed in Chapter Five. Additional information on impacts to air quality has been added to the finding.</p>
<p>On page 5-15, there should be some discussion of the potential impacts of single and multi-season ice road crossings of rivers and streams, particularly relating to bank erosion.</p>	<p>Erosion rates vary widely from crossing to crossing and DO&G does not feel that a more detailed discussion in the finding would affect the balance of the document at this time. Ice road construction is authorized under the ACMP general concurrence (GC) list. This list establishes certain common activities as consistent with the ACMP. Under GC-34, all rehabilitation shall be completed to the satisfaction of ADNRR or the applicable land manager. Rehabilitation shall be completed with full consideration of technical guidance provided by the Division of Agriculture, Plant Material Center.</p>

<p>The state has determined that its review of proposed Sale 87 will be a multi-phased development review. In other words, the Division of Oil and Gas director has limited his analysis solely to the potential effects of the lease sale phase of oil and gas activities, as opposed to the exploration and development/production phases.</p>	<p>State law allows for a phased review of oil and gas lease sales and the analysis in the best interest finding is premised upon that. The analysis assumes that there will be additional reviews at subsequent phases. However, the scope of the best interest finding is not limited to effects of just leasing. Analysis of effects of subsequent phases including exploration are discussed in Chapter Five.</p> <p>Phased review recognizes that leasing of state land may result in future proposals that cannot be predicted or planned with any certainty or specificity at the initial lease sale stage. Development or production of leases will require future detailed site-specific reviews prior to approval. Prior to an oil and gas lease sale, it cannot be known if, when, where, how, or what kind of development might ultimately occur. Advances in technology and market changes are unpredictable, yet they still affect leasing, exploration, and development decisions (and therefore effects). The lease sale phase only authorizes the transfer of mineral interests, but some level of exploration is expected. At this phase there is no specific proposed exploration or development project. The state has analyzed the reasonably foreseeable effects of exploration, development, production and transportation and has developed mitigation measures to protect valued resources and their human uses.</p> <p>Speculation concerning future development activities that will be subject to independent permitting requirements is not prudent at the time a decision is made to lease. Furthermore, state law specifically states that the director may not be required to speculate about possible future effects subject to future permitting that cannot reasonably be determined until the project or proposed use is more specifically defined. This includes speculation about the exact location and size of facilities, the economic feasibility of ultimate development, and future environmental or other laws that may apply at the time of any future development (AS 38.05.035(h)).</p>
<p>We are concerned with the issue of cumulative impacts and the way the state chooses to administer the coastal program within this new areawide framework. The Borough will demand a comprehensive consistency review of any annual areawide reoffering, which takes into account ongoing or proposed exploration and development activities, as the pattern of those activities becomes less speculative with successive lease sales.</p>	<p>A consistency review at the lease sale stage does not deal with ongoing or proposed exploration and development activities because each project or permit includes multi-agency consistency reviews. Measure 14 requires lessees, the NSB and potentially affected subsistence communities to discuss the reasonably foreseeable effect on subsistence activities of any other operations in the area that they know will occur during the lessee's proposed operations. This measure represents consensus reached by state resource agencies and the NSB that Sale 87 is consistent with the ACMP and NSB coastal district plan.</p>

<p>It is unreasonable to claim at the leasing phase that it is speculative to consider exploration and development scenarios, and then assert in reviews of individual exploration and development proposals that only project-specific potential effects can be considered in the analysis.</p>	<p>While ADNR maintains that it would be speculation to consider hypothetical exploration and development scenarios at the lease sale phase, it does not assert that only project-specific potential effects be considered at the plan of operations or development proposal phase. To the contrary, ADNR encourages plan of operations analyses to be as comprehensive as possible. For example, there is concern that future lease activities will conflict with traditional harvesting. To avoid unreasonable conflicts with subsistence harvesting, mitigation measure 14 requires lessees to include in their plan of operations a discussion of the reasonably foreseeable effect on subsistence activities of any other operations in the area that they know will occur during the lessee's proposed operations. Regulations stipulate that prior to approval, a plan of operations must contain sufficient information, based on data reasonably obtainable, at the time the plan is submitted for approval, for the commissioner to determine the surface use requirements and impacts directly associated with the proposed operations (11 AAC 83.158(d)). The ADNR commissioner may amend plans as necessary to protect the state's interest.</p> <p>Indirect, additive or cumulative effects are by definition not direct effects. Under this regulation, there is therefore no requirement for a cumulative effects analysis (beyond the project being proposed) at the Plan of Operations permit review.</p>
<p>Recommends that the state expand its communication and consultation with the North Slope public before finalizing its plans for conducting this first areawide sale.</p>	<p>ADNR Commissioner Shively has had additional communication and consultation with the NSB regarding this sale. Mitigation measure 14 has been modified (see above) to improve communications between potentially affected communities, industry, and the state prior to operations approval. If problems between industry and subsistence users cannot be resolved after the consultation process, then any party involved may request the commissioner of DNR or his designee to assemble the parties. The commissioner may assemble the parties or take other measures to resolve conflicts among the parties.</p>

City of Nuiqsut, Rosemary Ahtuanguaruak, 11/5/97	
The extreme cost of living in the Arctic puts many food staples out of reach to many families. The animals are seasonal and their habitat has been encroached upon over the years. The effects of the seismic activities do harm the bowhead migration path forcing our whalers to travel further to harvest. The fish are affected by the causeways and we have not had them to supplement our diets. The community has gone hungry in the past when the natural habitat is changed forcing the animals away. Our traditional resources are being threatened by this lease sale.	As a balancing agency, DO&G believes that oil and gas development can occur in a manner that will protect the ecosystem and the people of Nuiqsut. Virtually all of Sale 87's mitigation measures have been designed to protect fish and wildlife resources and habitats, as well as the subsistence hunting and fishing. The best interest finding recognizes the extraordinary environmental values of the North Slope and describes measures that will be implemented to mitigate against potential adverse impacts.
There must be a system that develops a board of local people that allows our community to be consulted.	Measure 14 has been rewritten to reflect a consensus reached among state agencies and the NSB during a director-level elevation. The term requires lessees to consult with potentially affected subsistence communities and the NSB before submitting a plan of operations, which is equivalent to a permit application. Lessees must discuss these consultations in the plan of operations they submit to DO&G for permit approval. They must also notify the director of DO&G of all concerns expressed by subsistence hunters during operations and of steps taken to address such concerns.
When the various activities are doled out to the subcontractors and there are breaks in the guidelines, who can we bring our concerns to?	Measure 12 requires lessees to have a training program for all personnel, including contractors and subcontractors, that addresses the need to protect the environment and cultural and historic resources. They are also required to help personnel increase their sensitivity to community values, customs, and lifestyles. Measure 13 encourages lessees to employ local and Alaska residents and contractors. Their plans of operation must include proposals detailing the means by which they will comply with this requirement. They must include a description of their plans for partnering with local communities to recruit and hire local residents. Plans of operation are "permits" issued by DO&G before any activities can take place on a lease. If you and the people of Nuiqsut believe there have been breaks in the guidelines, you can contact the director of DO&G.
We have seen an increase in asthma in our community of up to 400% and thyroid disorders of 800%. What has caused this? Is this problem related to developing petroleum reserves? Should we expect an increase in breast cancer?	Increases in asthma and thyroid disorders are serious, but it is beyond the expertise of DO&G to determine their causes. Likewise, DO&G cannot advise whether residents of Nuiqsut can expect an increase in breast cancer as a result of oil and gas development. However, we have developed a new lessee advisory number twelve, which encourages lessees to adopt conservation measures to reduce hydrocarbon emissions.

<p>We are seeing severe weather changes related to global warming. What should we do to stop this development and prevent worsening the global warming? The oil is running out and soon there won't be any to develop. Do we have to get all of it for the few greedy politicians to line their pockets with? Understand that our life will never be the same and severe hardships are due us if this sale is allowed to happen.</p>	<p>While there is recognition that global warming is occurring, there is no agreement as to its causes. DO&G cannot state that global warming is being caused by oil and gas development, and DO&G is not required to do an evaluation of global warming theories in order to determine that Sale 87 is in the state's best interest. However, we have developed a new lessee advisory (12) which says the state recognizes that in the long run sources of energy other than oil and gas will be needed, and that we will appreciate lessee participation in conducting research on alternative energy sources.</p>
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<p>North Slope Borough, Benjamin Nageak, 12/4/97</p>	
<p>The NSB appeals the best interest finding because there were no public meetings held in the affected communities. DO&G instead tried to accommodate only one informational meeting at Nuiqsut and teleconference in Atqasuk, Anaktuvuk Pass, Kaktovik and Barrow. Written public notices in English are not well understood. The best interest finding fails to fully address the borough's concerns about use of explosives, marine mammals, cumulative and secondary impacts and the effects on air quality.</p>	<p>ADNR made a substantial effort to schedule a public meeting/teleconference for Sale 87. This meeting was to be held in Nuiqsut, with teleconferences to Barrow, Kaktovik and Anaktuvuk Pass. The meeting was originally scheduled for October 9, 1997, but had to be postponed until November 13 because the commissioner of ADNR was very ill. The November 13 meeting was cancelled following a tragic airplane crash in Barrow on November 9. Because of the commissioner's schedule, and upcoming holidays, ADNR suggested a meeting on December 3 or 4. This conflicted with a Kuukpik Corporation retreat. With village leaders absent, the commissioner decided it was best not to schedule a meeting at that time. Because ADNR could not schedule a meeting date all parties could agree to, it extended the public comment period for Sale 87.</p>

<p>The NSB elevates the proposed consistency determination because there were no public meetings held in the affected communities. If DO&G had held public meetings they would have heard concerns about the cumulative impact oil and gas development has already had on the Inupiat. The NSB does not believe DO&G has met the requirement to give due deference and hear our concerns as specified under 6 AAC 50.120(a). The elevation is centered on mitigation measures 1 and 14. The borough proposed alternate language for these two terms.</p>	<p>The NSB elevation of the proposed consistency determination resulted in the following changes to mitigation measures 1 and 14:</p> <p>1. a. Explosives must not be detonated within, beneath, or in close proximity to fishbearing waters if the detonation of the explosive produces a pressure rise in the waterbody greater than 2.5 pounds per square inch (psi) unless the waterbody, including its substrate, is solidly frozen.</p> <p>Explosives must not produce a peak particle velocity greater than 0.5 inches per second (ips) in a spawning bed during the early stages of egg incubation. The minimum acceptable offset from fishbearing streams and lakes for various size buried charges is:</p> <table data-bbox="893 724 1315 913"> <tbody> <tr> <td>1 pound charge</td><td>37 feet</td></tr> <tr> <td>2 pound charge</td><td>52 feet</td></tr> <tr> <td>5 pound charge</td><td>82 feet</td></tr> <tr> <td>10 pound charge</td><td>116 feet</td></tr> <tr> <td>25 pound charge</td><td>184 feet</td></tr> <tr> <td>100 pound charge</td><td>368 feet</td></tr> </tbody> </table> <p>Specific information on the location of fishbearing waterbodies may be obtained by contacting ADF&G.</p> <p>b. The lessee will consult with the NSB prior to proposing the use of explosives for seismic surveys. The director may approve the use of explosives for seismic surveys after consultation with the NSB.</p> <p>14. a. Exploration, development or production operations shall be conducted in a manner that prevents unreasonable conflicts between lease related activities and subsistence activities. In enforcing this mitigation measure the division, during review of plans of operation, will work with other agencies and the public to assure that potential conflicts are identified and avoided to the fullest extent possible. Available options include alternative site selection, requiring directional drilling, seismic and threshold depth restrictions, subsea completion techniques, seasonal drilling restrictions, and the use of other technologies deemed appropriate by the Director.</p>	1 pound charge	37 feet	2 pound charge	52 feet	5 pound charge	82 feet	10 pound charge	116 feet	25 pound charge	184 feet	100 pound charge	368 feet
1 pound charge	37 feet												
2 pound charge	52 feet												
5 pound charge	82 feet												
10 pound charge	116 feet												
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100 pound charge	368 feet												

	<ul style="list-style-type: none"> b. Prior to submitting a plan of operations for both onshore and offshore activities which have the potential to disrupt subsistence activities, the lessee shall consult with the potentially affected subsistence communities and the North Slope Borough (NSB) (collectively “parties) to discuss potential conflicts with the siting, timing, and methods of proposed operations and safeguards or mitigating measures which could be implemented by the operator to prevent unreasonable conflicts. The parties shall also discuss the reasonably foreseeable effect on subsistence activities of any other operations in the area that they know will occur during the lessee’s proposed operations. Through this consultation, the lessee shall make reasonable efforts to assure that exploration, development, and production activities are compatible with subsistence hunting and fishing activities and will not result in unreasonable interference with subsistence harvests. c. A discussion of resolutions reached or not reached during the consultation process and plans for continued consultation shall be included in the plan of operations. The lessee shall identify who participated in the consultation and send copies of the plan to participating communities and the NSB when it is submitted to the division. d. If the parties cannot agree, then any of them may request the commissioner of DNR or his designee to assemble the parties. The commissioner may assemble the parties or take other measures to resolve conflicts among the parties. e. The lessee shall notify the director of all concerns expressed by subsistence hunters during operations and of steps taken to address such concerns. f. Lease-related use will be restricted when the Director determines it is necessary to prevent unreasonable conflicts with subsistence harvests.
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Oil and Support Service Industries

Anadarko Petroleum Corporation, Todd L. Liebl, 10/6/97	
Supports areawide leasing for the North Slope and Cook Inlet. Sale 87 and subsequent sales will provide industry with dependable and frequent opportunity to obtain oil and gas leases necessary to allow investment required for oil and gas exploration.	Areawide leasing allows for thorough region-wide analysis; eliminates confusing requests to the public; and increases government efficiency. Areawide leasing helps Alaska compete in the world market for oil and gas exploration activity. An annual leasing schedule that offers predetermined areas allows industry to plan their exploration strategies years in advance. This increases the likelihood of future exploration dollars being committed to Alaska.
Industry has demonstrated its ability to operate on the North Slope in a safe manner with minimal environmental impact. Technological advancements further reduce the impacts of future exploration and production operations.	Driven in part by environmental awareness, technological advancements have reduced the impacts of oil and gas activities on nature. Current methods are described in Chapter Two. Potential effects of oil and gas activities on fish and wildlife, and their habitats and human uses are discussed in Chapter Five.

Arco Alaska Inc., Michael A. Richter, 10/17/97	
Supports regularly scheduled and predictable lease sales. Encourages ADNOR to hold areawide sales on an annual basis.	The areawide leasing program allows the state to more efficiently analyze and offer state lands for lease on a regular schedule, eliminates repeated, confusing requests for review to the public and helps Alaska compete for effectively in the world market for oil and gas exploration activity. Prior to each annual sale, ADNOR will request new and significant information that has come available since the previous lease sale. Based on this information, ADNOR may supplement the finding prior to holding the next annual sale. New information could result in the inclusion of additional mitigation measures or the removal of certain areas from leasing. Sale 87 is scheduled to be held in June 1998. The current leasing schedule calls for other North Slope areawide sales to be held each February in 1999, 2000, and 2001. Areawide sales in other areas of the state are scheduled in a similar regular manner.
Recommends that ADNOR not decrease the aerial surface extent of proposed Sale 87. Arbitrary and unforeseen reductions in the size of the area make it difficult for industry to dedicate the time, personnel and other resources necessary to evaluate the sale area.	ADNOR has not reduced the aerial extent of Sale 87. Mitigation measures have been designed to provide protection for sensitive areas so that it would not be necessary to delete areas from the sale area.

<p>Recommends that leases have a fixed twelve and one-half percent (12.5%) royalty rate. Operators can anticipate prospects covered by Sale 87 will have smaller potential reserve sizes. Smaller prospects may require access to existing facilities and infrastructure to economically justify any exploration. The fixed royalty rate of 12.5 percent will reduce the minimum economic reserve size required for each prospect such that industry can justifiably drill these smaller prospects. The rate will also encourage the development of a greater number of smaller discoveries that collectively will increase the amount of royalties paid to the state. Also suggests the state offer leases with a minimum of seven (7) year primary term, so that successful bidders will have sufficient time to conduct seismic surveys and exploratory drilling, given the short operating season and lengthy permitting process.</p>	<p>Chapter Eight of this Finding contains an analysis of the leasing methods and terms. The selection of the bidding method, minimum bid, and term of the lease was made following the department's pre-sale analysis of economic, engineering, geological, and geophysical data. The bidding method selected was one that best secures revenues for the state without creating disincentives to industry.</p>
<p>Have serious concerns about increased operational restrictions on lease activities and operations. Onerous lease provisions will reduce industry participation in lease sales, and make the eventual operation under those leases uneconomic.</p>	<p>ADNR attempts to provide reasonable protection for the environment and cultural values of the lease sale areas while at the same time encouraging the economic development of state resources. Most mitigation measures include "feasible and prudent" language to allow for conditions that can only become known when the area is actually proposed for exploration and/or development. We urge interested parties to provide specific examples of onerous or overly restrictive measures so ADNR can evaluate the concerns raised when developing the measures.</p>

Alaska Oil and Gas Association, Judith M. Brady, 10/20/97	
<p>Recommends that ADNR not decrease the area proposed for Sale 87. Previous sales in the Sale 87 area have resulted in multiple studies by ADNR, Fish and Game, DEC, as well as studies and comments by the North Slope Borough and other local entities. With this kind of information background, there should be little disagreement over the size of the area or the type of mitigation measures required for the lease sale.</p>	<p>ADNR has not reduced the aerial extent of Sale 87. Mitigation measures have been designed to provide protection for sensitive areas so that it would not be necessary to delete areas from the sale area.</p>
<p>Recommends that Sale 87 leases have a minimum seven-year primary term to allow a successful bidder to conduct exploratory drilling and seismic surveys during their limited winter season. Also recommends that Sale 87 leases have a twelve and one-half percent (12.5%) fixed royalty. This royalty rate has in the past encouraged exploration of more remote prospects by reducing the minimum economic reserve size required for each prospect to be developed.</p>	<p>Chapter Eight of this Finding contains an analysis of the leasing methods and terms. The selection of the bidding method, minimum bid, and term of the lease was made following the department's pre-sale analysis of economic, engineering, geological, and geophysical data. The bidding method selected was one that best secures revenues for the state without creating disincentives to industry.</p>

<p>Recommends that the right to drill water wells in connection with leasing operations remain in the granting clause of the lease. We take strong exception with exclusion of “water wells” in the granting clause; historically, that right has always been included.</p>	<p>The right to drill water wells in the granting clause of the lease was removed after the state promulgated water rights regulations. Today, water withdrawals and water use permits on state lands are authorized by DMWM under 11 AAC 94. According to Division records, the granting clause has not been included in state oil and gas leases since 1971. Historically more of the state’s leasing experience has been without the clause, however the clause remains in pre-1971 leases including most Prudhoe Bay Unit leases.</p>
<p>Sale 87 is an onshore lease sale, yet there are several references to offshore operations and measures. All references to offshore operations should be eliminated.</p>	<p>The finding refers to offshore operations and potential impacts to offshore activities that might be anticipated as a result of onshore activities related to Sale 87.</p>
<p>Mitigation Measure 2 should clarify that the use of “existing gravel pads” is permissible. As written, it does not appear to allow the construction of exploration facilities (i.e., wells) on existing gravel pads, as has been general industry practice. The same clarification should be incorporated in Chapter 5, page 5-12, Mitigation Measure on Turbidity, and page 5-16, Mitigation Measure on Habitat loss minimization.</p>	<p>Mitigation Measure 2 deals with access to exploration sites, not the pads themselves. Mitigation Measure 6 specifically allows the use of existing gravel pads for exploration activities.</p>
<p>Mitigation Measure 4 places onerous restrictions on water intake pipes used to remove water from fishbearing water bodies. The goal is admirable, which is to keep the fish in the lakes and streams. However, fishbearing is a vague term that requires clarification or definition. Further, it is questionable whether an Operator can keep the maximum water velocity at the intake at 0.1 ft./second for non-permanent water withdrawals. This would equate to a velocity of 6 ft./min. in a vacuum truck hose, which is not what operators presently use for water withdrawal and may not be operationally achievable.</p>	<p>Currently, industry takes most of its water from designated and permitted water reservoirs (often flooded gravel mine sites) or from non-fishbearing lakes. ADF&G requires 1/4 inch mesh screens on the intakes in summer in sites that contain anadromous fish. They do not require intake screens in winter as (1) ice accumulation on the intake screens can restrict or prohibit water withdrawal, (2) the intakes are generally placed in the middle of the water column to avoid sucking up mud and gravel, and (3) fish generally remain near the bottom as they conserve energy and oxygen, and as a consequence also avoid the intakes. ADF&G is preparing a technical report (currently in the final review stages) describing development and testing of light-weight, readily deployable, portable water intake structures that have been developed in cooperation with the Alaska Department of Transportation and Public Facilities. Approach water velocities for the second generation 6 inch intake cylinders were less than ADF&G's most restrictive water intake criteria of 0.1 fps for whitefish fry.</p>
<p>Mitigation Measure 6 calls for exploration facilities to be constructed of ice, artificial gravel islands excepted. This clause does not allow use of abandoned gravel structures on a case-by-case basis so the ADNRR should be receptive to allowing use of existing gravel that is not abandoned, as suggested above.</p>	<p>As stated in the response to Mitigation Measure 2, Measure 2 concerns access to exploration sites, not pads, and Mitigation Measure 6 does allow the use of existing gravel pads for exploration facilities.</p>

<p>Mitigation Measure 7a should be modified. The terms “existing corridors” and “where conditions permit” in the measure are vague and require definition or criteria that operators can rely on. The burial of heated lines in North Slope permafrost is difficult from an engineering and operational perspective. Such an action can result in subsidence of the pipeline, thermokarsting of the ground, and other adverse conditions to the subsurface. It may be impracticable or impossible to technically bury heated pipelines as directed.</p>	<p>Existing corridors are presently defined by air routes between landing strips. Air space is controlled by the FAA and US Military. Previously, corridors were established by overland travel. Overland transportation generally runs east west along the Beaufort Sea coast and north south along rivers. Where “conditions” permit means “given existing permit approvals are acquired.”</p>
<p>Prohibiting the construction of causeways and docks in river mouths or deltas (Measures 10b and 10c) should be considered on a case-by-case basis. As presented, the prohibition predetermines that no feasible or prudent alternatives exist.</p>	<p>The state does not believe the construction of causeways and docks should be allowed in river mouths or deltas. The NSB also supports this prohibition. The intent of the measure is to ensure that approved causeways are designed, sited, and constructed to prevent significant changes to nearshore oceanographic circulation patterns and water quality characteristics (e.g., salinity, temperature, suspended sediments) that result in exceedances of water quality criteria, and must maintain free passage of marine and anadromous fish. Therefore the suggested change will not be adopted.</p>
<p>Measure 14a is unclear and vague with respect to the definition of “unreasonable” conflicts. The measure allows for the imposition of unclear restrictions as deemed appropriate by the Director. Therefore, the “unreasonable” standard could change from one Director to another.</p>	<p>Unreasonable conflicts are instances where a proposed lease-related activity would violate policies of the NSB coastal management program (adopted verbatim into NSB Municipal Code) or miss the intent of this mitigation measure. Consider NSBCMP policy 2.4.3(d): Development shall not preclude reasonable subsistence user access to a subsistence resource. The intent of this policy is identical to that of Mitigation Measure 14; to ensure that development will not preclude reasonable subsistence user access to a subsistence resource. All lease activities must comply with local ordinance. NSB municipal code defines reasonable access as “access using means generally available to subsistence users.” Precluding access “addresses not only means of access, but access to areas where resources are present and can be used by subsistence users.” This standard is unlikely to change from Director to Director.</p>
<p>Considering Sale 87 is an onshore sale, we recommend Mitigation Measure 14b require AEWC consultation for offshore projects only.</p>	<p>Adopted. This measure evolved from a subsistence protection measure originally developed for a previous offshore lease sale (Sale 86). Measure 14 has been modified to fit the Sale 87 North Slope region. Because only onshore tracts will be offered, Measure 14b no longer requires consultation with AEWC, but still requires consultation with communities.</p>

<p>In addition to documentation of resolutions and consultation with the affected communities, as prescribed in Mitigation Measure 14c, the appointment of a community representative who shall represent the community's interest is desirable. As may be the case, a community may not speak with one voice, but operators must rely on that voice to proceed with orderly consultations and resolution determination.</p>	<p>Measure 14 has been rewritten to reflect a consensus reached among state agencies and the NSB during a director-level elevation. The term requires lessees to consult with potentially affected subsistence communities and the NSB. DO&G does not see this as limiting the parties lessees can consult, nor does it require lessees to listen to only "one voice" in the community. On the other hand, appointment of a community representative may facilitate problem solving, improve communication between local residents and the lessee, and avoid confusion. Lessees are expected to be innovative in problem solving. For example, Arco Alaska Inc. assembled a subsistence advisory panel of community members to guide the design and planning of the Alpine project. In addition to municipal officials, elders, Village council members, and possibly Native corporations should be included in consultations.</p>
<p>Mitigation Measure 14d suffers from the use of vague language. It would be advisable to have criteria for what constitutes a concern and who specifically can raise such concern.</p>	<p>DO&G does not feel that such criteria are necessary at the lease sale phase to preserve the intent of this mitigation measure, that is to avoid unreasonable conflicts with subsistence harvesting. If problems arise, this measure provides the mechanism for conflict resolution. The language of this measure has been the subject of an ACMP consistency elevation, and represents the consensus reached between state resource agencies and the NSB.</p>
<p>Mitigation Measure 17b incorrectly states that the ADEC regulates annular disposal of muds and cuttings. The AOGCC now regulates annular disposal as well as other underground injection.</p>	<p>This is correct. As of September 1996, AOGCC now administers annular disposal of drilling waste under 20 AAC 25.080. The finding has been amended.</p>
<p>Regarding Lessee Advisory 4, applicable seismic survey operation measures should be treated as a separate consideration from leasing measures. Any such measures in the body of the lease are inappropriate. Lease measures adopted in Sale 87 have no effect on ongoing seismic operations. Additionally, if seismic surveys are conducted by or contracted for by the lessee after the sale they continue to be non-lease-related activities and need to be considered on an area-by-area basis focusing on the properties of the area.</p>	<p>It is true that one does not have to be a leaseholder to apply for and obtain geophysical exploration permits and Sale 87 measures may not be applied to existing permit application approvals. Lessees may or may not propose operations that include seismic surveys in the Sale 87 lease area, and may not therefore have any control over those activities. However, it is the state's position that post-lease seismic surveys conducted by or contracted by the lessee may be considered lease-related activities. Regardless, all seismic permits are tailored with site and time-specific stipulations to protect resource values; resolve use conflicts, and ensures consistency with coastal management program policies, local ordinance, and federal law.</p>

BP Exploration (Alaska) Inc., E.P. Zseleczy, 10/20/97	
Supports Sale 87 and new areawide leasing process. As with all lease sales, land availability and certainty of sale schedule are important considerations for planning, coordination of sale preparation with other exploration and leasing activities for budgeting purposes.	Comment noted. The areawide leasing program allows the state to more efficiently analyze and offer state lands for lease on a regular schedule, eliminates repeated, confusing requests for review to the public and helps Alaska compete for effectively in the world market for oil and gas exploration activity. Prior to each annual sale, ADNDR will request new and significant information that has come available since the previous lease sale. Based on this information, ADNDR may supplement the finding prior to holding the next annual sale. New information could result in the inclusion of additional mitigation measures or the removal of certain areas from leasing. Sale 87 is scheduled to be held in June 1998. The current leasing schedule calls for other North Slope areawide sales to be held each February in 1999, 2000, and 2001. Areawide sales in other areas of the state are scheduled in a similar regular manner.
While the best interest finding is comprehensive, the analyses could be improved with the following revisions: Since Sale 87 is an onshore area, discussion of offshore impacts should be confined to potential marine support activities related to onshore exploration and development.	While Sale 87 tracts are entirely onshore, offshore lease operations may be proposed for marine support or where petroleum accumulations straddle the coastline.
Greater recognition and discussion should be given to the oil industry's environmental planning activities and studies over the past 25 years on the North Slope and the Beaufort Sea. The extensive list of mitigation measures implies that such activities, including incorporation (voluntary) of environmental mitigation features in project design, are not standard practices when in fact they are.	The mitigation measures represent a consensus of state and local agencies and the public that has developed for the North Slope over the past 20 years. The Finding references numerous oil industry-sponsored studies and standard operating practices; however the mitigation measures are not the appropriate place to discuss the oil industry's environmental planning activities and studies. The agencies considered these projects in developing the measures. Listing the measures is intended to make it clear to the industry and the public what is expected of the industry, especially those companies who have not previously operated on the North Slope, during the time they use this area for oil and gas exploration and development. ADNDR does not intend to imply that the industry is not already performing these actions and fully recognize that the industry often goes above and beyond these measures.
In light of the oil and gas industry regulatory programs described in Chapter One, there needs to be greater justification and rationale provided for the extensive mitigation measures proposed.	Measures adopted reflect consensus reached among state agencies and the NSB. The ACMP (6 AAC 50.120) requires ADNDR to give "due deference" to state resource agencies having the knowledge regarding the resources for which they have management responsibilities. Rationale and justification is discussed during the ACMP consistency review process and is included in consistency determination documents.

Appendix A: Comments and Responses

<p>It should be noted that the requirement for Plans of Operations to comply with the requirements of coastal zone consistency regulations should only apply to portions of Sale 87 that are within the boundaries of the North Slope Borough coastal district.</p>	<p>It is correct that a review for consistency with coastal management program will not be conducted outside of the coastal zone. On the North Slope, the coastal zone includes all coastal areas inland to about 25 miles, and one-mile inland from the banks of major rivers. However, it is the position of the state that Sale 87 mitigation measures will apply to all portions of the Sale 87 area.</p>
<p>The language of Mitigation Measure 3a and 3b should be “tightened” with respect to ADF&G’s authority, the scope of which is defined in part according to the stream identification process that produces the atlas of anadromous fish streams.</p>	<p>While ADF&G does not require a permit for water withdrawal in lakes or streams with resident fish, it does require a permit for withdrawal from waters containing anadromous fish that have been designated by the commissioner and incorporated into the Catalog of Waters Important for Spawning, Rearing or Migration of Anadromous Fishes. Therefore inclusion of ADF&G in this measure ensures that its intent be preserved. The general practice of industry in recent years has been to try to identify and avoid fish-bearing lakes where possible for water withdrawal.</p>
<p>Regarding Mitigation Measure 6, there may be a complex chain of use and liability with respect to abandoned gravel structures. To encourage their use for exploration activities, where feasible, ADNR should address this problem and not impose final restoration requirements upon the penultimate user.</p>	<p>Comment noted. This is a growing problem for the state and potential lessees, especially if acquired facilities or parcels have contaminated soil or water in need of restoration. ADNR is currently reviewing the findings of a working group that was formed in 1991 (consisting of AOGA, DO&G, DL, ADF&G, and ADEC) to address this issue. The original effort was put on hold pending resolution of tax issues. Measures may be amended in subsequent annual sales if warranted by substantial new information.</p>
<p>That portion of Mitigation Measure 7a which requires pipeline burial “where soils and geophysical conditions permit” does not take into account the many technical and economic factors involved in selecting a pipeline design. This part of the measure should be deleted.</p>	<p>Technical considerations in addition to soil and geophysical conditions are addressed in the pipeline design phase prior to construction permit approval. Considerations include corrosion, leak detection, and spill response capability. The advantages of burial, such as invisibility and unrestricted movement of wildlife and people may be outweighed by disadvantages, such as reduced inspection and leak detection, spill response capability, scarring of the land, and effects of removal and rehabilitation of the corridor. Exceptions to this measure may be granted by the Director if an above ground pipeline is determined to be environmentally preferable. As noted above, these measures represent consensus among state resource agencies and the NSB regarding consistency with the ACMP. If problems and issues arise, these measures may be reviewed after the annual 60-day comment period for this Areawide sale and amended if necessary. Exceptions to this measure may be granted by the Director if an above ground pipeline is determined to be environmentally preferable.</p>

Appendix A: Comments and Responses

Mitigation Measure 10 presumes adverse environmental impacts from causeways. Sentences one and two of this measure should be deleted since the third sentence covers the environmental performance requirement. It is unclear why this measure is included with respect to an onshore sale. The document should confine itself to onshore activities and related marine support.	While Sale 87 tracts are entirely onshore, offshore lease operations may be proposed for marine support or where petroleum accumulations straddle the coastline. This measure represents consensus reached among state resource agencies and the NSB. ADNR considers language adopted since the most recent Arctic lease sale (Sale 86) an improvement over the total prohibition against causeways, which had been a standard measure since 1979.
Mitigation Measure 11 requires an evaluation that is already standard practice for North Slope operators. Such stipulations give the appearance that existing regulations or practices are inadequate.	ADNR has found it useful to repeat language that reflects standard practices as it helps to assure the public that the state will continue to do it right. Hopefully readers are not left with the impression that existing regulations are inadequate.
Regarding Mitigation Measure 14a, the “available options” identified may be infeasible, technically impracticable (e.g. subsea completion techniques) or make a project uneconomic. This stipulation should delete these options and simply require a performance standard.	This language is a result of inter-agency consensus. It was developed in lieu of seasonal and surface entry restrictions. Infeasible or impracticable alternatives are identified at the Plan of Operations permit phase.
While consultation is important (Measure 14b) for subsistence conflict resolution, there should be no formal requirement to consult with the AEWC unless there are offshore operations associated with Sale 87 exploration and development.	Agree. This measure, originally developed for a previous offshore lease sale (Sale 86), has been modified to fit the Sale 87 region. Because it is a totally onshore sale, Measure 14b no longer requires consultation with AEWC, but still requires consultation with potentially affected communities. Measure 14 has been rewritten to reflect a consensus reached among state agencies and the NSB during a director-level elevation.
Regarding Mitigation Measure 17b, AOGCC not ADEC regulates annular disposal of drilling wastes.	This is correct. As of September 1996, AOGCC now administers annular disposal of drilling waste under 20 AAC 25.080. The finding has been amended.

Others

Northern Alaska Environmental Center, Sara Callaghan; Alaska Center for the Environment, Kevin Harun; Greenpeace, Melanie Duchin; Oilwatch Alaska, Jim Sykes, 10/20/97

Opposed to areawide sales and Sale 87. We do not believe the state cannot adequately assess the environmental impacts of leasing a 5.1 million-acre area with a single finding good for the next ten-years.

The state of Alaska has been gathering and analyzing data on the effects of oil and gas activities for more than 30 years. All areas to be offered in this sale have been offered and analyzed before and baseline information on the sale area collected by state entities including the University of Alaska have been incorporated into this best interest finding. Thus, this finding draws on three decades of North Slope lease sale research. See reference lists at the end of each chapter. In addition to data submitted by the public, other state agencies and federal agencies with professional expertise in all disciplines have contributed to the content of this document. The state recognizes that this document is a snapshot and a look forward; that change is constant; and that new information may prove or disprove statements of truth or fact. Where data is lacking, the document acknowledges deficiencies. For example, data on groundwater occurrence and yield is limited throughout Alaska. Issues of concern are continuously researched.

This document will be amended when new information is obtained. An annual 60-day comment period allows for continued public and agency input on annual leasing decisions. If substantial new information is obtained which may affect the current document, a supplement to the finding will be issued, and if necessary, additional resource protection measures may be imposed.

The preliminary finding and ACMP analysis fail to adequately discuss past and current impacts of oil and gas activities on habitat loss and degradation; air and water pollution; oil spills; wilderness recreation; and effects on subsistence resources. The preliminary finding and ACMP analysis fail to adequately discuss the potential direct and indirect harm and cumulative effects in the future from exploration and development of Sale 87 leases. The state has not provided mitigation measures that will adequately protect the environment, wildlife, and subsistence uses.

Sale 87 includes mitigation measures designed specifically to protect resource values at subsequent phases when permit authorizations are made. AS 38.05 requires that the division discuss the cumulative effects of Sale 87 and subsequent oil and gas activities on habitats, fish and wildlife populations and human use of the sale area. Chapter Five discusses the reasonably foreseeable cumulative effects of Sale 87, including effects on air and water quality and habitats. ADNR disagrees that this discussion is inadequate. As a balancing agency, Title 38 of Alaska law makes ADNR responsible for allowing economic development while providing maximum practicable protection to fish and wildlife resources. Sale 87 mitigation measures have been developed with this goal in mind. State resource agencies and the NSB have determined that Sale 87 is consistent with the ACMP and the NSBCMP.

<p>The state should analyze the potential contribution of greenhouse gas emissions from the anticipated oil development, processing, transportation, and consumption of crude oil and its products, as well as the development of climate-friendly alternatives such as wind and solar power.</p>	<p>Assessing the effects of future hypothetical emission volumes would be speculative, as both the quantity and quality of future emissions are not reasonably foreseeable. Incorporating speculation into the document would cloud the director's determination as to whether this lease sale is in the best interests of the state. However, because of the state's interest in encouraging clean air, a new lessee advisory has been added to the document. Lessee Advisory 12 encourages lessees to adopt conservation measures to reduce hydrocarbon emissions. Additionally, the state recognizes that in the long run, sources of energy other than oil and gas will be needed. Lessee participation in conducting research on alternative energy sources is appreciated.</p>
<p>In order to protect fish and wildlife resources, subsistence resources, and scenic and wilderness resources, we urge ADNR to delete from the areawide leasing program all areas within 5-miles of the Canning and Colville Rivers.</p>	<p>DO&G does not believe deletions are necessary considering the numerous mitigation measures and lessee advisories for Sale 87, and the numerous state, federal and local laws and policies governing oil and gas development. These measures and laws strongly favor environmental protection at some hidden cost to the private sector. Additionally, any activities that might result from the Sale will go through another public review under the ACMP. There will be an opportunity to add further mitigation measures at that time.</p>

<p>The mitigation measures (9 and 21) proposed by the state to protect these areas are not adequate, because they include “to the extent feasible and prudent” language. This is a huge loophole largely subject to the interpretation of the oil companies. The words, “when feasible and prudent” should be removed from all lease sale mitigation measures.</p>	<p>DO&G is currently reviewing the effectiveness and efficacy of mitigation measures as they are presently worded. DO&G’s use of “feasible and prudent” in its mitigation measures does not constitute a loophole. 6 AAC 80.130(d) specifically allows for a “feasible and prudent” standard of review when granting approvals for activities such as oil and gas development. Uses and activities in coastal areas that do not conform to the habitats standards may be allowed by districts or state agencies if there is a significant public need for the activity, there is no feasible or prudent alternative to meet the public need for the proposed use or activity, and all feasible and prudent steps will be taken to maximize conformance with the habitats standards.</p> <p>“Feasible and prudent” is defined by 6 AAC 80.900 to mean “consistent with sound engineering practice and not causing environmental, social or economic problems that outweigh the public benefit to be derived from compliance with the standard modified by the term ‘feasible and prudent.’” The FEIS for the ACMP states that the Alaska Coastal Policy Council adopted the limitations of 6 AAC 80.130(d) in recognition of the fact that complete nondegradation is an impossible standard to meet, and that in certain instances, tradeoffs between natural values and other human values would have to be made. The FEIS further states that the term “feasible and prudent” is used to describe situations when a normally applicable standard may be departed from; where forcing compliance with the standard would be impossible or cause a worse result than non-compliance. The term appears in the ACMP in the standards on coastal development, energy facilities, transportation and utilities, mining and mineral processing, and habitat protection. This term is not subject to the interpretation of the lessee. Lessees do not administer the ACMP.</p>
<p>Lessee Advisories should be made binding lease conditions and strengthened to eliminate loopholes.</p>	<p>Lessee Advisories contain information to lessees on existing law or important operational information about oil and gas industry activities in the sale area. Lessee advisories may contain information that is subject to change, whereas mitigation measures generally do not. The preface to the mitigation measures clearly states that lease-related activities must comply with all relevant local, state, and federal laws, including the policies of the ACMP and local district plans. Therefore, in that they reflect existing law, some lessee advisories are binding lease conditions. Others may contain information on regulatory authority beyond ADNR jurisdiction.</p>
<p>It is unclear whether the state intends the Staines River part of the Canning to be covered by its terms which mention the Canning River.</p>	<p>It is the state’s intent that the Staines River portion of the Canning River be covered by measures that mention the Canning River.</p>

<p>Recommend adding a new lease stipulation that no exploration or development activities, including groundwater withdrawal, impoundment, or diversion of water from rivers, streams, lakes, wetlands or groundwater in the Canning/Staines River, areas that form the border of the Arctic National Wildlife Refuge, or from within the Arctic Refuge shall be allowed.</p>	<p>This is not necessary at the lease sale phase to protect natural resources at subsequent phases. Impoundment and diversion of waterbodies are subject to the requirements of the Clean Water Act under permits authorized by EPA, ADEC, COE, and if it could affect anadromous fish passage, ADFG. The Division of Mining and Water Management manages groundwater and surface water withdrawals. During the multi-agency permitting process, stipulations are attached to any number of permits as appropriate for the specific project.</p>
<p>The state's analysis does not adequately describe the past, existing, and future environmental impacts to fish and wildlife habitats, air and water quality, wilderness values, subsistence resources and access, and the cumulative effects of onshore and offshore development including the effects of climate change.</p>	<p>AS 38.05.035 limits the scope of the best interest finding. The topics that must be considered in a best interest finding are fish and wildlife species and their habitats in the area; the current and projected uses in the area, including uses and value of fish and wildlife; the reasonably foreseeable cumulative effects of oil and gas exploration, development, production, and transportation on the sale area, including effects on subsistence uses, fish and wildlife habitat and populations and their uses, and historic and cultural resources; lease stipulations and mitigation measures, including any measures to prevent and mitigate releases of oil and hazardous substances, to be included in the leases, and a discussion of the protections offered by these measures. These topics and a history of past development and its documented effects are discussed in the finding.</p> <p>While the document does discuss the effects of existing and potential oil and gas activities, it does not describe the effects of past industry practices because methods have changed. For example, waste disposal sites were previously unlined pits, which resulted in groundwater contamination. It would not be reasonable to assume that the similar contamination effects would occur as a result of leasing, because current waste disposal practices do not have the same effect on the environment.</p> <p>Granting a lease alone does not authorize any activities beyond what is already permitted. It does not authorize any activity that would impact air and water quality or violate federal law, like the Clean Water Act. Permits issued by federal, state and local agencies regulate specific activities that might occur if the exploration, development and production phases ultimately come to fruition. Lessees are required to comply with the mitigation measures developed at the lease sale phase, and additional project-specific measures can be imposed as needed to be consistent with the ACMP and the NSCMP.</p>

<p>The state does not adequately predict the consequences of lease sales and their resulting environmental impact; therefore it cannot justify one best interest finding to be good for the next ten years.</p>	<p>See Chapter One for a list of required ingredients for a best interest finding; a best interest finding is different than an EIS required under the National Environmental Protection Act. This document adequately assesses the reasonably foreseeable cumulative effects of leasing. As noted above, this finding draws on three decades of lease sale area research. The finding will be amended when new information is obtained. An annual 60-day comment period allows for continued public and agency input and comment. If substantial new information is obtained which may affect the current document, a supplement to the finding will be issued, and if necessary, additional resource protection measures may be imposed.</p>
<p>The state fails to predict how many oilfields will come on line during this period, or to estimate how many new oil fields would be discovered and delineated, and to project the number of drill sites, processing plants, and docks, road miles, pipeline miles, miles of seismic lines, acres of gravel fill and excavation, and quantities of air and water pollutants resulting from the sale.</p>	<p>The location and sizes of any new discoveries, or even their existence is unknown at the time of the sale, and there is no reasonably accurate means to estimate their presence. Hence, it is also not possible to accurately predict the location, size, or type of infrastructure that might be eventually necessary. Speculation concerning future development activities that will be subject to independent permitting requirements is not prudent at the time a decision is made to lease. State law specifies that the director may not be required to speculate about possible future effects subject to future permitting that cannot reasonably be determined until the project or proposed use is more specifically defined. This includes speculation about the exact location and size of facilities, the economic feasibility of ultimate development, and future environmental or other laws that may apply at the time of any future development (AS 38.05.035(h)).</p>
<p>The state fails to assess the likelihood of development proposals continuing to be made for extremely sensitive habitats, such as within the floodplain of the Colville River, or to estimate how often oil companies would say it is not “feasible and prudent” to follow the terms of mitigation stipulations.</p>	<p>Again, assessing the likelihood of development in specific areas and estimating the type of activities that might eventually be necessary is extremely speculative. Incorporating speculation into the document would cloud the director’s determination as to whether this lease sale is in the best interests of the state.</p>

<p>Although recent advances in operations have reduced the environmental footprint of development, the geographic spread of new development is expected to be considerably more extensive than what has occurred to date. New fields under development may require more intensive infrastructure because of the different depths of the reservoirs or the types of oil being extracted. This necessitates an on-going assessment of impacts that will not occur with the Areawide sale approach.</p>	<p>ADNR does not expect the geographic spread of new development to be more extensive than what has occurred to date in existing oilfields. Regarding footprints, new field developments require fewer drilling sites than in the past. Chapter Two includes a discussion of methods of oil and gas extraction. Expansive facility additions would not be needed to develop fields adjacent to existing infrastructure and other accumulations beneath the existing oilfields. Extraction of new accumulations beneath the existing oilfields would be accomplished with existing roads, facilities, and drill sites. This document will be amended when new information is obtained. An annual 60-day comment period allows for continued public and agency input on annual leasing decisions. If substantial new information is obtained which may affect the current document, a supplement to the finding will be issued, and if necessary, additional resource protection measures may be imposed. Information on any impacts of geographic spread would be considered under this review.</p>
<p>The finding needs to describe the geographic extent and location of privately owned areas that will be jointly leased under this areawide sale. Although the model lease sale form was included in the Appendices, it is not clear what areas would be covered by it, and how the leasing conditions would apply. How do the state's laws and standards of environmental protection apply in these areas? Do they apply to the bed and banks of the Colville River where ASRC has ownership?</p>	<p>Jointly owned state/ASRC lands in the proposed sale area are identified on tract maps. Because there is no solution to the surface use agreement conflict (described in Chapter Two), acreage under these areas may not be available for leasing. This affects five tracts totaling 5,044 acres (Tracts 917, 918, 924, 923, and 926). Acreage not owned by the state, already subject to an oil and gas lease, or clouded by title claims will be excluded from the tract area and only those lands free and unencumbered will be included in Sale 87. Any activity on a Sale 87 lease, or accessing a Sale 87 lease, regardless of surface ownership, is subject to Sale 87 mitigation measures.</p>

<p>Mitigation measures should be applicable to geophysical exploration activities including water withdrawals, surface damage to the tundra including riparian willows, degradation of overwintering fish habitat, and disturbance to denning polar bears.</p>	<p>All Sale 87 mitigation measures will apply to lease-related activities regardless of surface ownership status. Geophysical exploration is regulated as a separate activity from leasing, however some exploration activity may be considered lease-related and mitigation measures may apply. Standard permit conditions to protect resource values are included in the ACMP general concurrence (GC) list. This list includes common activities that have been determined to be consistent with the ACMP. Provisions in the list provide for protection of the tundra surface, riparian willows, and fish habitat. For example, standard permit conditions in GC-25 stipulate that movement of equipment through willow (<i>Salix</i>) stands must be avoided wherever possible. It also stipulates that equipment, other than vessels, must not enter open water areas of a watercourse during winter. Ice or snow bridges and approach ramps constructed at river, slough, or stream crossings must be substantially free of extraneous material (i.e., soil, rock, wood, or vegetation) and must be removed or breached before spring breakup, and alterations of the banks of a watercourse are prohibited. ADF&G's fish habitat permit would be required if the exploration program encountered anadromous fishbearing streams. Standard fish permit requirements are presented in Sale 87 mitigation measure 16. Water withdrawals and water use permits on state lands are authorized by DMWM under 11 AAC 94. Any violations should be reported to DO&G immediately.</p> <p>GC-25 stipulates that operations must avoid occupied grizzly bear dens by one-half mile unless alternative mitigative measures to minimize disturbance are authorized by ADNR after consultation with ADFG. Known den locations shall be obtained from the ADFG Division of Wildlife Conservation prior to starting operations. Occupied dens encountered in the field must be reported to the above, and subsequently avoided.</p> <p>GC-25 also advises applicants that the Marine Mammal Protection Act prohibits intentional disturbance, harassment, catching or killing of marine mammals. Operations must avoid known polar bear dens by one mile. Known den locations shall be obtained from the U.S. Fish and Wildlife Service prior to starting operations. New dens encountered in the field must be reported to the above, and subsequently avoided by one mile.</p>
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	U.S. citizens may be authorized by the NMFS to take small numbers of marine mammals from a non-depleted stock incidentally, but not intentionally, in specified areas. To comply with federal regulations, oil and gas activities in important polar bear habitat areas are subject to a Letter of Authorization (LOA) from the USF&WS Regional Director of the Alaska Region. ADNDR recommends that this authorization be obtained by the permittee before conducting any operations in or near coastal areas. The decision to request a LOA is up to the individual operator, although they are liable for incidental takes in the absence of a LOA. LOA's specify terms and conditions appropriate for the conservation of polar bears, such as interaction plans and detection efforts. LOA's are tailored to the individual project and take into consideration factors including the time period and specific location where the activity is to take place.
Mitigation Measures should be part of the actual lease. Mitigation measures should be included in plans of operation, exploration or development and other permits.	Mitigation measures are attached to the lease and are considered part of the lease contract. Failure to adhere to the mitigation measures could result in loss of the lease.
An important lease term that was in previous lease sales has been deleted and should be reinstated. Recommends adopting the following: "Upon abandonment of drilling sites, all buildings, erosion armament, production platforms, pipelines, roads, and other facilities must be removed and the site rehabilitated."	Abandonment, ownership, and liability issues are complex and will require greater attention in the future as existing oil and gas resources are depleted and the surface infrastructure ages. ADNDR is currently reviewing work completed by a group that was formed in 1991 (consisting of AOGA, DO&G, DL, ADF&G, and ADEC) to address this issue. The original effort was put on hold pending resolution of tax issues. Numerous measures are currently under review, including abandonment provisions.
Construction of artificial gravel islands or gravel drilling pads or airstrips for exploration should not be allowed, as this is not state-of-the-art technology. Recommends modifying mitigation measure 6 to read, "Exploration facilities shall be temporary and must be constructed of ice. Re-use of onshore abandoned gravel structures may be permitted on a case-by-case basis by the Director, after consultation with the director, DL, and ADF&G."	Current industry practice is that exploration is only conducted in winter with the use of ice roads and ice pads. It is highly unlikely that an artificial gravel island, gravel road, or airstrip would be constructed for exploration of Sale 87 tracts, because of the lower cost alternative. These measures represent consensus among state resource agencies and the NSB. If problems and issues arise, these measures may be reviewed after the annual 60-day comment period for this areawide sale and amended if necessary.

<p>Regarding measure 7a, there is no evidence that soil and geophysical conditions permit that pipelines be safely buried within the Sale 87 area. Extensive sections of the Trans-Alaskan Pipeline needing repair due to corrosion have been where it was buried in river floodplains on the North Slope. Concerned about the effects of oil spills from pipelines buried beneath rivers. The technology of this technique (burial) has not been adequately proven to be safe or preferable to other alternatives. The third sentence of measure 7a stating a preference for buried pipelines should be deleted.</p>	<p>Technical considerations in addition to soil and geophysical conditions are addressed in the pipeline design phase prior to construction permit approval. Considerations include corrosion, leak detection, and spill response capability. The advantages of burial, such as invisibility and unrestricted movement of wildlife and people may be outweighed by disadvantages, such as reduced inspection and leak detection, spill response capability, scarring of the land, and effects of removal and rehabilitation of the corridor. As noted above, these measures represent consensus among state resource agencies and the NSB regarding consistency with the ACMP. If problems and issues arise, these measures may be reviewed after the annual 60-day comment period for this areawide sale and amended if necessary.</p> <p>The intent of mitigation measure 7a is to minimize the environmental impact that could result from pipelines. Pipeline technology on the North Slope is advancing. New corrosion-fighting techniques have been developed that reduce the risk of leaks. Any new development that might occur as a result of Sale 87 will be able to take advantage of the lessons learned from previous attempts. Burying pipelines on the North Slope is possible in some cases; however, the final decision to bury or not can only be made when all of the details about the new project are known.</p>
<p>Permafrost and erosion should be added to the pipeline hazards listed in measure 7b.</p>	<p>Measure 7(b) requires that all pipelines be designed and constructed to provide adequate protection from subfreezing temperatures and other hazards. Hazards by definition under 6 AAC 80.900(9) include erosion. Therefore, the suggested change is not necessary.</p>

<p>The restriction on gravel mine sites in measure 9 only applies to exploration, and is thus weak. Please modify the third sentence of the measure to read, "Gravel mine sites shall not be located within floodplains of rivers and streams." Add a new sentence to measure 9 to include restrictions previously included in lease terms (see Term 20 for state Sale 80, Shaviovik): "Gravel extraction shall be prohibited from barrier islands, spits, tidelands, submerged lands, offshore shoals, lagoons and nearshore areas." Despite the NSB policy regarding mining of beaches, it is in the public interest to make this a clear lease stipulation.</p>	<p>While it may be consistent with the intent of this mitigation measure, the cost of prohibiting gravel mine sites on the North Slope from being sited in floodplains may outweigh the benefits to resource protection. See Lessee Advisory 1. Sale 80 Term 20 is enforced through NSBCMP policies 2.4.5.1 and 2.4.5.2 and NSB Code §19.70.050(J) & (R). Substantial alteration of shoreline dynamics is prohibited. NSBCMP policies and municipal code will only permit mining and gravel extraction in the coastal area when a lessee can establish (1) there is a significant public need; (2) they have rigorously explored and objectively evaluated all feasible and prudent alternatives; and (3) no feasible and prudent alternative exists. They additionally require evaluation of such proposals with respect to type of extraction operation, location, possible mitigation measures, and season so as to lessen, to the maximum extent practicable, environmental degradation of coastal lands and waters. Further, gravel mine permits are approved by the DL and may not be lease-related activities. Therefore DO&G will not adopt the suggested addition.</p>
<p>Strengthen measure 10a to read, "Solid fill causeways offshore in the Beaufort Sea, including in lagoons, river mouths, or deltas should not be allowed." Strengthen measure 10b to read, "Causeways and docks shall not be located in river mouths or deltas. Artificial gravel islands and bottom founded structures shall not be located in river mouths or active stream channels on river deltas."</p>	<p>It is not clear that adoption of this additional language is necessary to ensure that the intent of the measure is achieved. The intent of the measure is to ensure that approved causeways are designed, sited, and constructed to prevent significant changes to nearshore oceanographic circulation patterns and water quality characteristics (e.g., salinity, temperature, suspended sediments) that result in exceedances of water quality criteria, and must maintain free passage of marine and anadromous fish. This standard will be applied to all nearshore gravel structures regardless of location. Although not the preferred alternative, location of certain facilities in river mouths or active stream channels may sometimes be necessary for oil field development.</p> <p>The language contained in this measure has evolved through extensive discussion among state resource agencies and the NSB, and represents consensus reached among state resource agencies and the NSB that Sale 87 is consistent with the ACMP and NSB Coastal district policies. This measure may be amended through inter-agency consensus if substantial new information warrants modification. Therefore, DO&G cannot adopt the recommended change.</p>

<p>In order to assure that adequate subsistence resources and harvest opportunities are maintained, and to evaluate the nature and extent of conflicts with subsistence that arise, measure 14c should be modified by adding a new sentence to the end of the term which would read, “Any agreements, including conflict avoidance agreements, which result from the consultations required by the lease term, shall be included in the plan of operations.”</p>	<p>Mitigation measure 14 has been strengthened to require plan of operations to include a discussion of the reasonably foreseeable effect on subsistence activities of any other operations in the area that applicants or affected communities know will occur during the lessee’s proposed operations. Also required in the plan of operations is a discussion of resolutions reached or not reached during the consultation process and plans for continued consultation. The lessee shall identify who participated in the consultation and send copies of the plan to participating communities and the NSB when it is submitted to the division.</p>
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<p>State-of-the-art technology no longer requires the use of reserve pits on the North Slope and therefore the state should not allow their construction. Replace sentences 4 through 6 of measure 17b with the following: “Surface discharge of drilling muds and cuttings into lakes, streams, rivers, wetlands, lagoons, and Beaufort Sea waters is prohibited. Use of reserve pits for exploratory, production, or development well drilling waste disposal is prohibited because other alternatives exist.”</p>	<p>AOGCC regulations require that prior to drilling a well, a proper and appropriate reserve pit must be constructed, or appropriate tankage installed for the reception and confinement of drilling fluids and cuttings, to facilitate the safety of the drilling operation, and to prevent contamination of groundwater and damage to the surface environment (20 AAC 25.047). Thus the statement that reserve pits are no longer required is false.</p> <p>The state discourages the use of reserve pits for permanent disposal of drilling waste and prefers reinjection of drilling fluids into the substrate. This is discussed in Chapter Five. However, there may be instances where injection is not the environmentally preferred option or state-of-the-art waste disposal technology. Solid waste disposal regulations, including provisions for temporary storage of drilling waste have been adopted by ADEC under 18 AAC 60. These regulations require operators of waste disposal facilities that accept drilling waste to include methods used to prevent discharge of drilling waste leachate and certification that the waste will be removed from the property within one year after completing the drilling operation. Containment structures must be leak-proof and lined with a material compatible with hydrocarbons and drilling waste. Monitoring requirements include site inspections and surface water or active thaw zone monitoring. Facilities must comply with several technical guidelines, including EPA’s <i>Solid Waste Disposal Facility Criteria Technical Manual</i> (1993). 18 AAC 60.430 stipulates that “if the department finds that a drilling waste disposal facility is unstable or poses a risk to public health or safety or the environment, the department [ADEC] will require the owner to conduct a 5-year monitoring program. Regulations have also been adopted for closure of inactive reserve pits (18 AAC 60.440).</p> <p>Measures and lessee advisories in place for this sale represent consensus reached among state resource agencies (ADNR, ADF&G, ADEC) and the North Slope Borough during the ACMP consistency determination process. As part of areawide leasing, DO&G will hold an annual 60-day comment period allowing for continued public and agency input on sale mitigation measures. If substantial new information is obtained which may affect the current document, a supplement to the finding will be issued, and if needed, additional resource protection measures may be imposed.</p>
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<p>Strengthen measure 18a to read, “Disposal of wastewater into freshwater bodies, including Class III, IV, VI, and VIII wetlands, riparian wetlands, fish-bearing streams and lakes, lagoons, and river deltas is prohibited.” Revise measure 18b to reflect the current state-of-the-art regarding these toxic fluids to read: “Surface discharge of reserve pit fluids shall be prohibited.” Revise measure 18c to read, “Disposal of produced waters in upland areas shall be by subsurface disposal techniques.” Revise measure 18d to read, “Discharge of produced waters into open or ice-covered marine waters, including lagoons and river deltas, is prohibited.”</p>	<p>Discharge of wastewater and other fluids are authorized under the National Pollution Discharge Elimination System Arctic general permit. This program is administered by EPA and permits require ADEC certification. ADNOR and ADEC recognize that there may be circumstances where surface discharge is acceptable, such as during training or spill response exercises. AOGCC and ADEC, not ADNOR regulate disposal by injection. While the state prefers injection, there may be circumstances where an alternative disposal method is preferable. These measures as written give the state flexibility to consider alternative methods. ADNOR may in its discretion require additional measures at the time it reviews lease plans of exploration, operation, or development.</p>
<p>Revise measure 19 to read, “All facilities, including gravel mines, shall be sited outside identified brant, white-fronted goose, snow goose, tundra swan, king eider, common eider, spectacled eider, Steller’s eider, and yellow-billed loon nesting, molting, and brood-rearing areas. Baseline monitoring studies for the purpose of identifying these habitats shall be based on at least five years of data approved by the U.S. Fish & Wildlife Service.”</p>	<p>Spectacled and Steller’s eiders have been added to the list of bird species in measure 19. This term originally applied only to brant, snow geese and common eider. At the request of other agencies, the species list has been expanded over the years including the addition for Sale 87 of spectacled and Steller’s eiders. Depending on how one defines nesting and brood-rearing areas for each particular species, this ever-expanding list could close large areas to facility siting because of overlapping use areas for the various species. Permanent staffed facilities are most likely to be larger (greater actual habitat loss) and have more activity associated with them (greater functional habitat loss) than would unstaffed or remote facilities (with the possible exception of roads with traffic). For some of the more concentrated use areas (brant nesting colonies or snow geese on Howe Island) the state expects industry to avoid these areas of their own volition.</p>

<p>Regarding measure 20 and the increasing industrial encroachment of brown bear and polar bear habitat, most polar bear and brown bear dens will not be identified prior to drilling and development due to inadequate funding of such monitoring studies and the inherent limitations (only some dens are ever located). Therefore, measure 20 will have no effect for those dens. Recommend that operations should not be approved for areas where dens have been located in the past, as these vicinities would likely be used in the future, in addition to documented dens. Revise measures 20a and 20b to include all past or present den locations. Measure 20c should be revised to state, “lessees, including operators of geophysical studies, shall be required to prepare and implement grizzly bear and polar bear interaction plans.”</p>	<p>According to ADF&G, as bears dig new dens each year, the locations of past dens will not accurately predict the location of the current years’ dens. Locations of past years’ dens will provide a general indication of the types of areas that are selected for dens and would provide information that the general area should be examined closely for den sites in the current year.</p> <p>Most polar bear dens are identified prior to drilling and development. All known den locations from the previous season are obtained from USFWS. Land survey crews look for dens prior to ice road route selection and some terrain, such as coastal bluffs where denning is common are avoided. Dens are identified prior to seismic and drilling. Currently, there is some ongoing research on the North Slope on polar and grizzly bears, that through the use of radio and satellite collars, allows identification of the denning sites of some bears. However, as all bears are not collared, not all bear den sites are currently known. Some research is focusing on the use of forward-looking infrared thermal imaging system (FLIR) to identify bears in dens, which if it becomes operational for this task, could be used to scan routes of ice roads, seismic lines, etc prior to operation.</p> <p>Standard permit conditions to protect resource values are included in the ACMP general concurrence (GC) list. This list includes common activities that have been determined to be consistent with the ACMP. GC-25 advises applicants that the Marine Mammal Protection Act prohibits intentional disturbance, harassment, catching or killing of marine mammals. GC-25 stipulates that Operations must avoid occupied grizzly bear dens by one-half mile unless alternative mitigative measures to minimize disturbance are authorized by ADNOR after consultation with ADFG. Known den locations shall be obtained from the ADFG Division of Wildlife Conservation prior to starting operations. Occupied dens encountered in the field must be reported to the above, and subsequently avoided. Additionally, Operations must avoid known polar bear dens by one mile. As noted in Chapter Three, female polar bears show fidelity to denning locations of the same substrate (onshore, offshore), not exact location. Nonetheless, known den locations shall be obtained from the U.S. Fish and Wildlife Service prior to starting operations. New dens encountered in the field must be reported to the above, and subsequently avoided by one mile.</p>
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	<p>U.S. citizens may be authorized by the NMFS to take small numbers of marine mammals from a non-depleted stock incidentally, but not intentionally, in specified areas. To comply with federal regulations, oil and gas activities in important polar bear habitat areas are subject to a Letter of Authorization (LOA) from the USF&WS Regional Director of the Alaska Region. ADNDR recommends that this authorization be obtained by the permittee before conducting any operations in or near coastal areas. The decision to request a LOA is up to the individual operator, although they are liable for incidental takes in the absence of a LOA. LOA's specify terms and conditions appropriate for the conservation of polar bears, such as interaction plans and detection efforts. LOA's are tailored to the individual project and take into consideration factors including the time period and specific location where the activity is to take place.</p> <p>In the interests of health and safety, it is prudent to prepare and implement bear interaction plans for operations proposed to take place in bear habitat. The subject of <u>requiring</u> bear interaction plans was decided at an elevation of the issue for Sale 80 between DO&G and ADF&G. It is not logical to require lessees to prepare and implement grizzly bear interaction plans prior to project proposal. If a project is proposed that includes activities in close proximity to areas frequented by bears, DO&G encourages the lessee through Measure 20, to prepare and implement interaction plans.</p>
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<p>Revise measure 21 to read, “Riparian buffers. Onshore facilities (including drill pads, processing plants, gravel mines, airstrips, waste-disposal sites, storage pads, water removal structures, docks, and others) except for road crossings or pipeline crossings aligned perpendicular to watercourses, shall not be sited within 500 feet of fishbearing streams. Additionally, facilities shall not be sited within one-half mile of the banks of the main channel of the Sagavanirktok, Kavik, Shaviovik, Kadleroshilik, Echooka, Ivashak, Kuparuk, Toolik, Anaktuvuk, and Chandlar Rivers. Finally, to provide maximum protection, onshore facilities as listed above shall not be located within five miles of the banks of the main channel of the Colville River nor shall onshore facilities, including roads or pipelines, be located within 5-miles of the Arctic National Wildlife Refuge boundary along the Canning/Staines River.”</p>	<p>Part of this proposed change to Measure 21 pertains to lease-related activity (drill pads, processing plants). However, gravel mines, waste disposal facilities, airstrips and docks may not be lease-related either before or after field development and production. Siting of such facilities is subject to local authority. It is not in the state’s best interest to preclude local authority over facility siting.</p> <p>Measure 21 as written provides the protection recommended, with the exception that essential facility siting will be allowed in buffers if the director, after consulting with DF&G, determines that facility restrictions within the buffers are not feasible or prudent. The feasible and prudent standard is allowed by the ACMP in situations when a normally applicable standard may be departed from; where forcing compliance with the standard would be impossible or cause a worse result than non-compliance. Five-mile buffers along the Colville and Canning Rivers are not necessary given the mitigation measures and lessee advisories for the sale, along with the considerable body of laws and regulations governing all facets of oil and gas development. Five-mile buffers would essentially preclude exploration and development on the affected tracts even though permit stipulations could achieve the intent of this measure: to protect riparian habitat.</p>
<p>Concerned about the potential effects of seismic operations to tundra vegetation, polar bears, ringed seals, and other marine mammals, chronic oil and hazardous spills, and wastes littering the tundra. Revise the third paragraph of Lessee Advisory 4 to read: “Copies of the non-proprietary portions of all Geophysical Exploration permit applications shall be made available to the NSB, AEW, potentially affected subsistence communities and the public for comment and later analysis of the cumulative effects of such programs (including geographic extent, timing, nature (3-D or 2-D), and line miles surveyed).”</p>	<p>Seismic operations are authorized by a land use permit that is subject to the ACMP review process. DO&G notifies the other resource agencies and the NSB when a permit application is received. The NSB should be contacted regarding their notification list.</p>
<p>Revise Lessee advisory 5c to state: “To minimize impacts on Dolly Varden (arctic char) and other anadromous fish overwintering areas, all temporary or permanent facilities shall be sited one-half mile outside identified and probable Dolly Varden (arctic char) and other overwintering fish areas.”</p>	<p>To protect Dolly Varden overwintering and spawning habitat, measure 21 has been modified by adding a new paragraph: No facilities will be sited within one-half mile of identified Dolly Varden both overwintering/spawning areas on the Kavik, Canning and Shaviovik Rivers. Road and pipeline crossings will not be sited within these buffers unless the Director, after consulting ADF&G, determines that such facility restrictions are not feasible or prudent.</p>

Dolly Varden overwintering areas should be deleted from the sale area.	See comment above regarding measure 21. Given the numerous mitigation measures in place, DO&G does not believe deletions are necessary at the lease sale phase to protect Dolly Varden at subsequent phases.
Revise Lessee advisory 8b to read: "Buffer zones of not less than 500 feet shall be required to separate onshore oil storage facilities and sewage ponds from freshwater supplies, streams, lakes, and key wetlands, except in cases where greater buffer zones were required in Measure 21. Reserve pits shall not be allowed."	The intent of this measure is to advise lessees of ADEC's laws and regulations governing oil storage facilities. It is not within DO&G's authority to change ADEC's laws and regulations, which were developed after public review, in a mitigation measure.
The list of sensitive areas identified in Lessee advisory 9 should be revised to read: "a. The Canning/Staines River Delta and Rivers, January-December; b. The Colville River Delta and River, January-December; c. The Sagavanirktok River delta, January-December."	Lessee Advisory 9 lists certain areas that are <u>especially</u> valuable for their concentrations of marine birds, marine mammals, fishes or other biological resources; cultural resources; and for their importance to subsistence harvest activities. The resource agencies have identified the major river deltas as being especially valuable and needing special consideration during the development of plans of operations for activities that may occur in those areas. The Colville, Canning and Staines Rivers all receive due consideration and have mitigation measures to protect them. For purposes of applying mitigation measures the state considers the Staines River a dis-tributary and part of the Canning River.

Alaska Eskimo Whaling Commission, Maggie Ahmaogak, 12/4/97	
<p>The AEWC has a concern related to the severe impacts resulting from pollution, particularly an oil spill, in light of the lack of response and cleanup capability in the Arctic. If an oil spill occurs and goes out to the ocean, it will flow directly out to the migration corridor of the bowhead whales.</p>	<p>Regarding oil spill concerns, the likelihood of a large onshore oil spill flowing into the ocean and impacting bowhead whales is very small and has never occurred in over thirty years of North Slope exploration and development. However, the possibility, though very unlikely, does exist and must be addressed. Oil spill response and cleanup in the Arctic is difficult and complicated by the harsh conditions found there. That is precisely why the industry puts so much effort and money into preventing spills. A number of mitigation measures have been adopted to minimize the potential for a large oil spill from a well blowout or pipeline rupture from reaching the Beaufort Sea. Proposed Mitigation Measure 7a requires that pipelines be located so as to facilitate the containment and cleanup of spilled hydrocarbons. Proposed Lessee Advisory 8 requires impermeable lining and diking, or equivalent measures such as double walled-tanks for onshore oil storage facilities. Proposed Mitigation Measure 14b requires lessees to consult with the NSB and AEWC to discuss potential conflicts with the siting, timing, and methods of proposed operations and safeguards or mitigating measures which could be implemented. Proposed Mitigation Measure 21 prohibits the siting of facilities within one-half mile of the banks of the main channel of the Colville, Canning and Sagavanirktok, Kavik, Shaviovik, Kadleroshilik, Echooka, Ivishak, Kuparuk, Toolik, Anaktuvuk and Chandler Rivers and within 500 feet of fishbearing streams, to the extent feasible and prudent. Onshore oil spills are much easier to contain and clean up than offshore spills. Therefore, it is important to contain onshore spills before they reach water. Chapter Six of the Finding includes a discussion of oil spill response issues and cleanup techniques. State and federal laws require response equipment to be immediately accessible and require operators to prepare an extensive oil spill contingency plan prior to beginning their activities. Spill prevention is extremely important, and one section of the spill contingency plan for each project contains a description of prevention measures that will be used for that project. One important prevention device is the blowout prevention equipment that each well must have.</p>
<p>We request that to mitigate impacts to the Arctic environment the state work with local residents to ensure that industry activities are consistent with their interests.</p>	<p>Measure 14 has been rewritten as a result of an elevation from the NSB. See response to NSB letter of 12/4/97 for the text of measure 14.</p>

<p>We support onshore oil exploration and development over offshore because onshore activities utilize known technology, have decades of successful experience, present lower levels of risk, and cause less interference with fish and wildlife and traditional subsistence hunting activities.</p>	<p>Sale 87 is an onshore sale. Mitigation measures developed for the sale are intended to avoid pollution of offshore areas as a result of onshore activities.</p>
<p>We join the NSB in supporting environmentally sound and properly regulated oil development, and in requiring that all North Slope oil development activities be carefully planned and conducted in a manner that protects the land and the sea, the environment, waterfowl, fish and wildlife and marine mammals.</p>	<p>As a balancing agency, DO&G believes that oil and gas development can occur in a manner that will protect the ecosystem. The best interest finding recognizes the extraordinary environmental values of the North Slope. In addition to NSB municipal code, ACMP reviews, and federal wildlife protection laws, mitigation measures ensure that natural resource values will be maintained. Virtually all of Sale 87's mitigation measures have been designed to protect fish and wildlife resources and habitats, as well as the subsistence hunting and fishing.</p>

Trustees for Alaska, Peter Van Tuyn, 12/5/97

<p>The importance of a cumulative effects analysis for this sale cannot be understated. Without it, we face the danger of conducting environmental reviews on a case-by-case basis without consideration of the true impacts. Initial approval of a project creates momentum toward development that can be very difficult to check. ADNRR should analyze the effects of existing development on the environment including air, water and coastal habitats and consider how new development will further impact the environment.</p>	<p>Fish, wildlife, habitats and human uses of the Sale 87 region are described in Chapters Two, Three, and Four. Effects of oil and gas activities are discussed in Chapter Five. AS 38.05 requires that the division discuss the cumulative effects of Sale 87 and subsequent oil and gas activities on habitats, fish and wildlife populations and human use of the sale area. Section B of Chapter Five discusses the reasonably foreseeable cumulative effects of Sale 87 in considerable detail, including effects on air and water quality and habitats.</p>
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<p>Before ADNDR can analyze the cumulative effect on air quality it should look to readily obtainable information about pollutant emissions in and around the sale area. TFA cites the EPA's Toxics Release Inventory for Alaska and ADEC's database of contaminated sites. ADNDR must also look at the list of "water quality impaired" waterbodies in Alaska. ADNDR must then analyze this information.</p>	<p>ADNDR agrees that it is appropriate to consider readily obtainable available information and it has analyzed the submitted information prior to issuing this best interest finding. However, this does not mean that ADNDR must discuss in the body of the best interest finding, every source, no matter how tenuous its relevance or materiality to the lease sale decision. Lists such as those cited by Trustees may or may not contain usable and useful information. If these lists contained sufficient information to determine that air or water pollution levels in a certain area were close to exceeding permissible levels, they might be relevant to a specific enforcement action but not to a lease sale which in itself authorizes no activities or facilities. Furthermore, a list of point sources of pollution existing at the time of the lease sale will quite likely be different at the point in time that a lessee actually proposes to build any facility. The Alaska Toxics Release Inventory (TRI) Trustees attached to its letter does not provide information that would be useful or material to ADNDR in determining whether or not a lease sale on the North Slope (or anywhere else in Alaska, for that matter) is in the state's best interest. First, the data are almost three years old. There are no North Slope facilities on the top ten list for total releases. The TRI does not include discharge information from exploration, production or pipeline facilities. The "inventory" lists the top five chemicals involved in air/land/water releases, yet gives no information on the facilities or activities that generated them or the repercussions of such releases. The DEC "database" of contaminated sites, also attached to Trustees's letter, is an eleven-page list of addresses, incident identification numbers, project managers' names and other routine bureaucratic information. Contaminated sites include grocery stores, dry cleaning establishments, military installations and miscellaneous businesses throughout the state. There are also a number of oil and gas drilling sites on the list.</p>
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<p>With such information before the leases are sold, ADNR will have the ability to place in the lease a condition that only a specified percentage of additional air emissions will be allowed to affect the North Slope airshed. This puts the public and industry on notice before the lease sale of the level of environmental impact the government will allow.</p>	<p>Again, as noted above, the information cited by Trustees, even if it were complete, is not useful as a planning tool. The overall air and water quality in the sale area is of material importance to ADNR, as are the regulatory mechanisms in place to ensure compliance with environmental standards. According to DEC, air quality throughout the proposed Sale 87 area is very good, with concentrations of regulated pollutants well below the maximum allowed under the National Ambient Air Quality Standards. If leases sold as a result of the sale are ever developed, limitations on nitrogen dioxide, sulfur dioxide and total suspended particulate matter will be imposed on industrial sources under the provisions of the Prevention of Significant Deterioration Program administered by EPA. The 1970 Clean Air Act established air quality programs to regulate air emissions from stationery, mobile and other sources that pose a risk to human health and the environment. ADEC monitors compliance with regulations and air quality standards through annual inspections and uniform enforcement procedures. The agency issues operating permits to existing major facilities incorporating all applicable requirements, and issues construction permits to new large facilities and for expansion of existing facilities. It is not possible to predict at the lease sale stage, which does not authorize exploration or development permits, the amount of pollutants that could be produced. All industrial emissions must comply with the Clean Air Act (42 U.S.C. §§ 7401-7642) and state air quality standards. 18 AAC 50 provides for air quality control including permit requirements, permit review criteria, and regulation compliance criteria. 18 AAC 50.300 sets up standards for air quality at certain facilities, including oil and gas facilities, at the time of construction, operation or modification. As oil and gas development proceeds, ADNR will rely on relevant statutes and regulations to assure that pollution arising from that development will remain within established limits.</p>
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	<p>ADNR has consulted ADEC's proposed 1998 list of surface waters not expected to meet state water quality standards ("Section 303(d) list" prepared to meet a requirement of the federal Clean Water Act). No North Slope waters are listed on the Section 303(d) list. The Nearshore Beaufort Lagoons from the Sag River to Simpson Lagoon had been on the list previously for temperature and salinity; however, causeway breaching appears to have improved habitat conditions. The area continues to be monitored. Based on this, ADNR concludes that water quality on the North Slope is good. The federal Clean Water Act established the National Pollutant Discharge Elimination System (NPDES) to permit discharges of pollutants into U.S. waters by "point sources," such as industrial and municipal facilities. In Alaska, the U.S. Environmental Protection Agency issues NPDES permits, designed to maximize treatment and minimize harmful effects of discharges as water quality and technology improvements are made. ADEC certifies that these discharge permits will not violate the state's water quality standards. Facilities send regular discharge reports to both the EPA and ADEC. Neither agency tabulates the data, which makes it unusable for this analysis.</p>
<p>Perfect information on all possible effects of development does not exist. However, ADNR should attempt to gather and analyze what data does exist. In seeking information and not finding it, ADNR identifies one area where information is lacking. This serves to put expert state and federal agencies and others on notice that such information would be useful.</p>	<p>ADNR does gather and analyze relevant data. In addition to its own considerable research efforts, ADNR conducts an extensive public outreach program before each sale to obtain information. ADNR issues three calls for information prior to a sale. For Sale 87 ADNR specifically asked for information on fish and wildlife in the sale area; current and project uses; information on climate, geography and potential geophysical hazards; characteristics of local communities; air and water quality; and, and the reasonably foreseeable effects of leasing on subsistence and other uses, on municipalities and other communities, and on the environment. This call was sent to everyone on the Sale 87 mailing list, including members of the public, industry and federal, state and local government agencies. ADNR evaluated all of the information provided to determine which was material to its best interest finding.</p>

<p>In its cumulative effects analysis, ADNR merely provides an incomplete list of potential activities which may occur as a result of an oil and gas lease sale, and the laws that may apply to such activities and development in the sale area. This information is meaningless as a planning tool. Unless it is used to actually analyze the cumulative effects of the lease sale, it is also legally deficient.</p>	<p>DO&G stands by its cumulative effects analysis as meeting the statutory requirements of AS 38.05.035(g). ADNR has reviewed the reasonably foreseeable cumulative effects of oil and gas exploration, development, production, and transportation on the sale area as required by AS 38.05.035. The finding discusses the laws and regulations that are intended to avoid adverse effects and presents mitigating measures to further provide protection for the environment while balancing this need for protection with the positive economic effect that may result. These factors are material to the analysis as to whether this decision is in the best interests of the state.</p>
<p>We encourage ADNR to include for Sale 87 results from the Sale 85 stakeholders such as 1/2 mile stream setbacks and encouraging lessees to reduce CO2 emissions.</p>	<p>Adopted. See Mitigation Measure 21 and Lessee Advisory 12.</p>

2. Comments prior to the Preliminary Best Interest Finding

This section of the appendix includes a summary of comments regarding Sale 87, North Slope Areawide prior to the Preliminary Best Interest Finding, and the ADNR response to those comments.

Comments submitted in response to:

- Call for Comments, Proposed State of Alaska Oil and Gas Lease Sales for 1996-1997, July 21, 1992.
- Call for Comments, Proposed State of Alaska Five-Year Oil and Gas Leasing Program, July 7 1994.
- Call for Comments, Proposed Oil and Gas Lease Sale 87, North Slope Foothills, January 23, 1995.
- Amendment to Five-Year Oil and Gas Leasing Program, January 16 1996.
- Proposed Oil and Gas Lease Sale 87, North Slope, May 23, 1996.

State Agencies

Alaska Department of Fish and Game, A. Ott, 4/5/97

1. Provides information on anadromous fish species in the proposed sale 87 area.
2. To the extent feasible and prudent, facilities will not be sited within one-half mile (0.8 km) of the banks of the main channels of the Colville, Canning, and Sagavanirktok Rivers; within one-quarter mile (0.4 km) for the Shaviovik, Kavik, Kadleroshilik, Echooka, Ivishak, Kuparuk Rivers, Toolik, Anaktuvuk and Chandler rivers; and that facilities will not be sited within 500 ft. (152 m) of all other fish-bearing streams and lakes. Similar setbacks were incorporated by DO&G for Cook Inlet Sale 85A. These facility set-backs would protect important riparian habitat, reduce disturbance to riparian species, increase protection of resident and anadromous fish, decrease the potential for oil spill damage, and provide for continued public access to lakes and streams.
3. Airstrips should be included as facilities that may not be sited within stream buffers, due to their potential for significantly disrupting and disturbing bird nesting, brood-rearing, feeding, molting, and staging.

This information has been incorporated into the preliminary finding.

Adopted. proposed Mitigation Measure 21 reads:

To the extent feasible and prudent, onshore facilities other than docks, or road and pipeline crossings, will not be sited within 500 feet of fishbearing streams. Additionally, to the extent feasible and prudent, facilities will not be sited within one-half mile of the banks of the main channel of the Colville, Canning and Sagavanirktok Rivers and within one-quarter mile of the banks of the Kavik, Shaviovik, Kadleroshilik, Echooka, Ivishak, Kuparuk, Toolik, Anaktuvuk and Chandler Rivers. Essential facility siting will be allowed in buffer areas in those instances where no other suitable sites are available. Facilities will be not be sited within 500 feet of all other fishbearing waterbodies unless the Director, after consulting ADF&G, determines that such facility restrictions are not feasible or prudent. Road and pipeline crossings must be aligned perpendicular or near perpendicular to watercourses.

The measure states that the siting of onshore facilities “other than docks, or road and pipeline crossings ... “ is prohibited within buffer areas. Thus, airstrips would be included as onshore facilities subject to the prohibition.

4. Additionally, as currently written, proposed Mitigation Measure 21 could be interpreted to mean that roads aligned parallel to fish-bearing streams and lakes would be allowed within the stream buffers. The word “road” should be replaced with “road crossing.”

5. Lessee advisory 8 should be returned to the permit term status of previous sales. Additionally, the oil storage facility buffer should be expanded from 100 ft. to 500 ft. in order to be consistent with Mitigation Measure 23. LA 8 should state that a 500 foot set-back from all fish-bearing waters will be required for all facilities. Additionally, ADF&G should be added to the consultation provision in LA 8, because of the relationship between this term/advisory and the measure addressing stream setbacks.

The suggested change regarding road crossings is unnecessary, because the final sentence of proposed Mitigation Measure 21 clearly states that road and pipeline crossings must be aligned perpendicular or near perpendicular to watercourses.

Permit-level requirements that are already covered by existing law are placed in the Lessee Advisory section. Lessee Advisories generally are those terms enforced by agencies other than ADNR. ADF&G will not be added to the consultation requirement because that would broaden the scope of the measure beyond its intent. The intent of the measure is to ensure that proposed operations are consistent with oil spill prevention regulations designed to ensure that the quality of waterbodies is maintained. Lessee Advisory 8b reads:

Buffer zones of not less than 500 feet will be required to separate onshore oil storage facilities (with a capacity greater than 660 gallons) and sewage ponds from freshwater supplies, streams, and lakes and key wetlands unless the Director after consultation with ADEC, determines that such a requirement is not feasible or prudent. Reserve pits, if used must be impermeable and otherwise fully contained through diking or other means.

6. An important lease term regarding abandonment and rehabilitation of sites included in earlier sales has been deleted. Rehabilitation is necessary to return the site to a condition where environmental contaminants are not present, and where surface flow, water movements, or currents approximate pre-disturbance conditions. Without the following term, the federal government will have sole control over site rehabilitation or restoration, to the exclusion of state concerns. Therefore, the following language should be adopted as a lease mitigation measure:

“Upon abandonment of drilling sites, all buildings, erosion armament, production platforms, pipelines or other facilities must be removed and the site rehabilitated unless the Director, DO&G, after consultation with ADF&G and ADEC, determines that such removal and rehabilitation is not in the state’s best interest.”

The information about site rehabilitation, described in Paragraph 21 of the Sample Oil and Gas Lease Contract, should be developed and included as a lease term. In this, rehabilitation would be defined as a final site closure term. Removal of gravel from abandoned roads and pads should be included in the definitions.

7. Recommends there be no surface entry within one-half mile of identified Dolly Varden overwintering and spawning areas.

8. A permit term similar to that included in Sale 80 should be included for peregrine falcons.

ADF&G has requested that paragraph 21 of the lease contract, which describes abandonment and rehabilitation of roads, pads, wells, and other improvements, should be developed and added as a “lease term” in order to provide for site rehabilitation. Lease paragraph 9(e)(3) requires lessees to include with their plan of operation plans for rehabilitation of the affected leased area after completion of operations or phases of those operations. The fact that the lease contract contains paragraphs 9 and 21 makes them lease measures. It would be unnecessary to have measures addressing the same issue in both the lease contract and in the mitigation measures which are attached to that contract.

ADNR is currently reviewing work completed by a working group that was formed in 1991 (consisting of AOGA, DO&G, DL, ADF&G, and ADEC) to address this issue. The original effort was put on hold pending resolution of tax issues.

DO&G has added Lessee Advisory 5c which reads:

To minimize impacts on Dolly Varden (arctic char) overwintering areas, permanent, staffed facilities must be sited to the extent feasible and prudent outside identified Dolly Varden (arctic char) overwintering areas.

DO&G has added Lessee Advisory 5b which reads:

Peregrine falcon nesting sites are known to occur in the proposed Sale 87 area. Lessees are advised that disturbing a peregrine falcon nest violates federal law. Lessees are required to comply with the federal resource recovery plan for the arctic peregrine falcon.

9. Lessees should be required, rather than encouraged, to prepare and implement both grizzly bear and polar bear interaction plans. DO&G has stated in previous sale documents that it has no authority to require polar bear interaction plans. However, grizzly bears are a species for which the state has jurisdiction. Therefore, DO&G should require lessees to prepare and implement grizzly bear interaction plans.

In the interests of health and safety, it is prudent to prepare and implement bear interaction plans for operations proposed to take place in bear habitat. The subject of requiring bear interaction plans was decided at an elevation of the issue for Sale 80 between DO&G and ADF&G. It is not logical to require lessees to prepare and implement grizzly bear interaction plans prior to project proposal. If a project is proposed that includes activities in close proximity to areas frequented by bears, DO&G encourages the lessee through proposed Mitigation Measure 20c, to prepare and implement interaction plans. At that project-level, ADF&G has the authority to require interaction plans. Further, ADF&G, not ADNR has the staff and technical experience to evaluate the appropriateness and content of such plans. A decision was made via the Sale 80 elevation that state policy remain to encourage rather than require the preparation and implementation of bear interaction plans. ADF&G agreed to the modified language of Measure 20. Measure 20 applies to both polar bears as well as grizzly bears.

Protection of polar bears is regulated under the federal Marine Mammal Protection Act (MMPA). In 1993, amendments to the MMPA made the USF&WS responsible for the conservation of polar bears in Alaska. These amendments allowed for the incidental, but unintentional “take” of small numbers of polar bears. (“Take”, as defined by the MMPA, means to harass, hunt, capture, or kill or attempt to harass, hunt, capture, or kill any marine mammal. “Harass” is defined to mean any act of pursuit, torment, or annoyance which has the potential to injure a marine mammal or marine mammal stock in the wild; or has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering.)

10. Permit Term 20 for Lease Sale 80, Shaviovik, should be included in proposed Sale 87 mitigation measures. Given the need for (and often limited distribution of) gravel for development projects, lessees may desire to use gravel from barrier islands, tidelands, submerged lands, lagoons, and nearshore sources. The term should prohibit gravel extraction from barrier islands and prohibit gravel extraction from tidelands, submerged lands, lagoons, and nearshore areas unless the Director, DL, finds in consultation with ADF&G and ADEC, that on the basis of scientific evidence, gravel extraction in these areas will not adversely affect the environment or that no alternative feasible and prudent gravel source exists.

To comply with the requirements of the “take” regulations, oil and gas activities in Important Habitat Areas in the Beaufort Sea are subject to a Letter of Authorization (LOA) from the USF&WS Regional Director of the Alaska Region. The decision to request a LOA is up to the individual operator, although they are liable for incidental takes in the absence of a LOA. LOA’s specify terms and conditions appropriate for the conservation of polar bears, such as interaction plans and detection efforts. Through the LOA, USF&WS has the authority to require and specify the type of interaction plans. LOA’s are tailored to the individual project and take into consideration factors including the time period and specific location where the activity is to take place.

See Lessee Advisory 1. Sale 80 Term 20 is enforced through NSBCMP policies 2.4.5.1 and 2.4.5.2 and NSB Code §19.70.050(J) & (R). Substantial alteration of shoreline dynamics is prohibited. The NSBCMP policies and code will only permit mining and gravel extraction in the coastal area when a lessee can establish (1) there is a significant public need; (2) they have rigorously explored and objectively evaluated all feasible and prudent alternatives; and (3) no feasible and prudent alternative exists. They additionally require evaluation of such proposals with respect to type of extraction operation, location, possible mitigation measures, and season so as to lessen, to the maximum extent practicable, environmental degradation of coastal lands and waters. Therefore, it is unnecessary for DO&G to adopt the suggested addition.

Alaska Department of Fish and Game, A. Ott, 11/22/96

1. Provides updated information on the Teshekpuk caribou herd.

This information has been incorporated into the PBIF.

2. As with previous oil and gas lease sales on the North Slope, we are concerned about the cumulative effects of exploration and development on fish and wildlife resources and their uses by local residents. Planning for this lease sale should include a commitment by the ADNRR to reviewing problems encountered and successes achieved in avoiding and mitigating impacts (including cumulative impacts) with its existing mitigation measures and stipulations, and developing any new strategies that might be needed. Initially, the ADNRR should secure funding for the development of baseline subsistence and socioeconomic data for the communities most directly affected by this proposed sale, and then establish a process for measuring changes consequent to exploration and development in the sale area. We recommend the ADNRR provide funding for and work with the ADF&G Division of Subsistence to carry out these recommended tasks. We also recommend that consultation with local communities be incorporated into the planning for future sales. This consultation should include discussion of problems the communities experienced that were or are perceived to have been associated with oil and gas activities, as well as successful actions taken to mitigate these problems through stipulations or other measures.

An important lease term regarding abandonment and rehabilitation of sites included in earlier sales has been deleted. Rehabilitation is necessary to return the site to a condition where environmental contaminants are not present, and where surface flow, water movements, or currents approximate pre-disturbance conditions. Without the following term, the federal government will have sole control over site rehabilitation or restoration, to the exclusion of state concerns. Therefore, the following language should be adopted as a lease mitigation measure:

“Upon abandonment of drilling sites, all buildings, erosion armament, production platforms, pipelines or other facilities must be removed and the site rehabilitated unless the Director, DO&G, after consultation with ADF&G and ADEC, determines that such removal and rehabilitation is not in the state’s best interest.”

DNR is committed to reviewing problems and successes associated with lease sale mitigation measures. This is done through both internal review and requests for public, agency, and local government comments. ADNRR, like most state agencies, has had to cope with budget cuts over the last few years and more cuts are anticipated in the future. Therefore, we are unable to provide funding to the Division of Subsistence. ADNRR is interested in exploring with ADF&G what other steps, short of funding baseline studies, could be taken to evaluate the effectiveness of current subsistence mitigation measures. Communities are invited to participate in the planning process through the calls for comments and may also schedule public hearings. DO&G issued five calls for comments on proposed Sale 87 and specifically requested comments on subsistence use. Based on these, and comments from previous sales we have modified mitigation measures. For example, the subsistence harvest protection measure (proposed Mitigation Measure 14) has been expanded to require operators to consult with the NSB and the affected subsistence community and discuss potential conflicts with siting, timing, and methods of proposed operations. Proposed Mitigation Measure 10 has been modified to clarify the intent to prohibit solid-fill structures which may alter nearshore circulation patterns. At the request of ADF&G, facility siting buffers along major rivers of the North Slope have been expanded from one-quarter mile to one-half mile and facility siting buffers along other fishbearing waterbodies have been expanded from 100 feet to 500 feet.

See response to comment 6 in the ADF&G letter of 3/5/97.

Recommends tracts containing identified Dolly Varden (Arctic char) overwintering areas be deleted from the sale.

See response to comment 7 in the ADF&G letter of 3/5/97.

To the extent feasible and prudent, facilities will not be sited within one-half mile (0.8 km) of the banks of the main channels of the Colville, Canning, and Sagavanirktok Rivers; within one-quarter mile (0.4 km) for the Shaviovik, Kavik, Kadleroshilik, Echooka, Ivishak, Kuparuk Rivers, Toolik, Anaktuvuk and Chandler rivers; and that facilities will not be sited within 500 ft. (152 m) of all other fish-bearing streams and lakes. Similar setbacks were incorporated by DO&G for Cook Inlet Sale 85A. These facility set-backs would protect important riparian habitat, reduce disturbance to riparian species, increase protection of resident and anadromous fish, decrease the potential for oil spill damage, and provide for continued public access to lakes and streams.

See response to comment 2 in the ADF&G letter of 3/5/97.

Airstrips should be included as facilities that may not be sited within stream buffers, due to their potential for significantly disrupting and disturbing bird nesting, brood-rearing, feeding, molting, and staging.

See response to comment 3 in the ADF&G letter of 3/5/97.

A term regarding protection of spectacled eiders should be applied to this sale.

Lessee advisory 5a reads:

Lessees shall comply with the Recommended Protection Measures for Spectacled Eiders developed by the USF&WS to ensure adequate protection of spectacled eiders during the nesting and brood rearing periods.

A permit term regarding the construction of elevated pipelines to insure the free passage of moose should be included in the mitigation measures.

Proposed Mitigation Measure 8 includes caribou and other large ungulates. It reads:

Pipelines shall be designed and constructed to avoid significant alteration of caribou and other large ungulate movement and migration patterns. At a minimum, above ground pipelines shall be elevated five feet, as measured from the ground to the bottom of the pipe, except where the pipeline intersects a road, pad, or a ramp installed to facilitate wildlife passage. ADNRC may, after consultation with ADF&G, require additional measures to mitigate impacts to wildlife movement and migration.

Alaska Department of Fish and Game, A. Ott, 6/30/95

Provides information on fisheries, terrestrial wildlife and subsistence within the propose sale area.

This information has been incorporated into the PBIF.

Federal Agencies

U.S. Fish and Wildlife Service, P. Sousa, 2/28/97 --

Recommends deletion of tracts used by caribou of the Central Arctic Herd, specifically tracts within concentrated calving areas. There are a number of lines of evidence which suggest long-term negative impact of oil and gas development on female caribou during the calving and post-calving period. In the past DO&G has responded to these data by stating that there is sufficient habitat available at the current population level. If ADNDR believes that such action is premature, the agency is obligated to present the logic of its case and propose an alternative approach that addresses the issue.

The Central Arctic Herd (CAH) ranges throughout the entire proposed sale area. DO&G believes that acute adverse impacts to calving caribou can be mitigated at the project proposal and design phase through lease sale mitigation measures, permit-specific stipulations, and thorough review of project proposals via the ACMP process. DO&G does not believe that deletion of tracts used by calving caribou is necessary to ensure the long-term viability of the herd for several reasons. Caribou calving areas change over time. It is not clear that acute disturbances from oil development have a population level effect on caribou. A reduction in fecundity may be correlated with the presence of oil field infrastructure, but no causal relationship is evident. Effects of modern oil field development is both quantitatively and qualitatively different than effects of older fields. Furthermore, population dynamics of caribou are driven by a multitude of factors other than habitat availability and nutritional stress caused by disturbance.

ADF&G has throughout the years of oil and gas lease sales, identified core calving areas of the CAH for inclusion in best interest findings. A review of past lease sale documents and other references reveals that such areas are not stationary (See State Oil & Gas Lease Sales 39, 45A, 48/48A, 51, 54, 52, 70A, 64, 80, and 86A). References depicting caribou calving areas include (AEIDC, 1975)(NSBCMP, 1983)(ADF&G, 1986)(Shideler, R.T., 1986)(USF&WS, 1986)(NOAA, 1987)(Cameron, 1994a)(Lawhead, et al., 1997)). Part of this movement may be explained in the variability in caribou distribution from year to year. Another reason may be differences in sampling method, survey area, and timing of surveys among researchers. In the last two decades, the distribution of caribou during calving periods has indeed shifted about in the Kuparuk development area (Cameron, 1995, citing to Smith and Cameron, 1992). The USF&WS (1986) presents a clear portrait of a shifting core calving area for the Porcupine Caribou Herd over the time period 1972 to 1985, although it should be noted that differences exist among the two herds with respect to herd size and range, and fidelity to calving grounds.

While it may be true that calving caribou of the CAH were observed in fewer numbers where the Milne Point road now lies, a conclusion that a shift in distribution equates to long-term negative impact cannot be easily made. Similarly, the occurrence and incidence of lateral movements does not appear to be a clear indicator of long-term viability of the CAH population. USF&WS, citing Cameron (1995) suggests that oil field disturbance leads to reduced nutritional intake of females, which leads to lower body condition, and eventually an increase in reproductive pauses (a year where a calf is not produced). Dr. Cameron reports that fecundity of females was higher in the undeveloped portion of the coastal plain, east of the Sagavanirktok River, as compared to the developed portion west of the river. However, it is not clear that oil development per se is the principal factor contributing to this disparity. The author notes that east-west differences in population density and habitat quality may also be contributing variables other than disturbance from oil field activity. Further, an increase in reproductive pauses may not necessarily be a vestige of long-term adverse effect on caribou populations. In a 1994 paper (abstract), Dr. Cameron writes, "Periodic infertility, as a response to nutritional stress, may enhance long-term reproductive performance in caribou and other ungulates." (Cameron, 1994b)

DO&G has not found sufficient evidence to conclude that caribou population size on the North Slope is a function of habitat availability. Other factors, such as disease, predation, and weather also play a role in caribou population dynamics. It is unlikely that oil field disturbance is a dominant factor which would cause a reproductive decline of the CAH. As described in Chapter Three, the population of the CAH rose steadily throughout the period of oil development on the North Slope.

Oil field disturbance, unlike other factors, can be avoided or reduced by human controls on facility design and operation. Albeit, new discoveries are smaller, the total acreage requirements to develop petroleum resources today are a fraction of what was needed to develop Prudhoe Bay and Kuparuk fields. For example, a drill site pad that occupied approximately 65 acres of surface area in the 1970s now covers less than 15 acres. Thus, estimates of the impacts of modern oil field development on caribou must not rely too heavily on comparisons with effects of older fields. Improvements in oil field design (pipeline and road layout, facility consolidation, elevation or burial of pipelines) and operations (aircraft and traffic restrictions) are likely to result in a significant reduction in the disturbance factor for caribou encountering new fields. Proposed Sale 87 tracts, if developed, will benefit from modern oil field development technology.

Observations and research findings are important in assessing the effects of oil and gas development on caribou. DO&G continues to review and incorporate all relevant data, observations, and information regarding the impacts of oil and gas activities on the long-term health of caribou herds, including the CAH. DO&G believes that acute adverse impacts to calving caribou can be mitigated at the project proposal and design phase through lease sale mitigation measures, permit-specific stipulations, and thorough review of project proposals via the ACMP process. Chapter Five includes a discussion of effects of oil and gas activities on caribou and subsequent mitigation of adverse effects. For more detail on proposed Sale 87 measures to protect caribou, see response to USF&WS letter of 8/21/92.

Lessees should be aware that key wetlands are generally presumed to be: fish-bearing streams and lakes, ponds/lakes with emergent sedge/grass, basin wetland complexes, saline meadow (i.e., "salt-marsh"), riparian zones (especially riparian scrub).

Wetlands and some wetland classification schemes are described in Chapter Three. Wetlands are lands where saturation with water is the dominant factor in determining the nature of soils and the types of plant and animal communities living in the soil and on the surface. Wetlands occur where the water table is at or near the surface, the land supports at least periodically water-loving plants (hydrophytes), and the substrate or surface is saturated with water or covered by water at some time during the growing season each year (Cowardin, et al., 1979:3). Non-wetland habitats include pingos, high-top polygons, steep river banks, gravel bars, and dunes (Carpenter, 1997).

Under Mitigation Measure 5, Key wetlands are those wetlands that are important to fish, waterfowl, and shorebirds because of their high value or scarcity in the region. Under Lessee Advisory 3, lessees are advised that the wetlands referred to in Mitigation Measures 5, and 18 are based on a classification system developed by Bergman et al (USF&WS Resource Publication 129, 1977 Waterbirds and Their Wetland Resources in Relation to Oil Development at Storkersen Point, Alaska). Lessees are advised that the state may adopt or approve the use of an alternative wetlands classification system in the future, however, the protective nature of the wetlands mitigation measures developed for this and other oil and gas lease sales will remain consistent regardless of the wetlands classification ultimately selected.

The Lease Sale document should identify generally applicable practices that minimize environmental impacts. In that regard, we call your attention to the 1994 report entitled "Stream crossing design procedure for fish streams on the North Slope coastal plain of Alaska," prepared by G.N. McDonald & Associates for BP Exploration (Alaska) Inc. and the Alaska Department of Environmental Conservation. The referenced document provides step-by-step guidance on design of cross-drainage structures, both culverts and bridges. ADNOR should require lessees to follow these guidelines.

ADF&G is the permitting authority for fishbearing streams. According to ADF&G, there are always new areas and new technologies and methods for crossing design procedures (e.g., flow model developed by Shannon and Wilson for the Alpine project), so some degree of flexibility for alternative approaches is warranted. Therefore ADNOR will not *require* lessees to follow these guidelines. However, ADF&G strongly encourages the use of the above referenced design approach, and when followed by applicants, permit issuance by the department is likely.

Spectacled eiders are not uniformly distributed over the proposed sale area. For much of the area, relatively inexpensive aerial surveys could document the absence of this species, relieving the lessee of the burden of more expensive site specific ground searches.

DO&G believes that surveys to document the presence of a particular species are best left to the plan of operations stage. This is particularly true in an areawide sale such as proposed Sale 87. The proposed sale area encompasses nearly 8,000 square miles. It is likely that much of this area will never be leased or explored, let alone developed. At the plan of operations stage, the relevant regulatory agencies can fully consider the environmental impacts of specific activities.

There is a need for improved communication between ADNIR and the Service with regard to water rights. We request notification of all applications for Temporary Water Use Permits involving the diversion, impoundment, or withdrawal of water from rivers, streams, lakes, wetlands, or ground water on ANWR, or that form a boundary of ANWR. In addition we request notification of all water right applications and Temporary Water Use Permit applications from surface or ground waters within one mile of ANWR.

We request the following mitigation measure: "Removal of snow cover from fishbearing rivers, streams, and natural lakes shall be subject to prior written approval by ADF&G and the Division of Mining and Water Management." This will ensure that DMWM will review snow cover removal as it might affect related water withdrawals and water rights granted from the specific river, stream, or natural lake.

With the exception of Temporary Water Use permits, notification is already being given to the USF&WS, through coordination with DGC and the Joint Pipeline Office. The request for additional person-specific notification has been forwarded to the DMWM.

The intent of this measure is to protect overwintering fish, not to regulate water withdrawals and water rights. Thus, the recommended change expands the scope of this lease sale mitigation measure beyond its intent, and will not be adopted. ADNIR defers to the best professional judgment of ADF&G regarding the effects of snow removals.

U.S. Fish and Wildlife Service, L. Bright, 8/21/92

The proposed sale area includes nesting areas of the threatened arctic peregrine falcon. Activities by lessees will require consultation with the Service under Section 7 of the Endangered Species Act.

Recommend the Colville River delta be deleted. If leased we support the inclusion of mitigation measures to protect water birds.

Recommend no permanent facilities, other than limited transportation crossings, be constructed within 3/4 mile of mean high water of the Colville River, and 1,500 feet of the mean high water of the Itkillik, Kuparuk, Toolik, Sakonowak, Ugnuravik, Miluveach, and Kachemach rivers and East Creek.

See response to comment 8 in the ADF&G letter of 3/5/97.

ADNIR has worked with ADF&G to develop mitigation measures to minimize the impacts of development on fish and wildlife throughout the proposed sale area, including the Colville River Delta. Mitigation measures that will protect water birds include: Proposed Mitigation Measure 5, which requires lessees to minimize the impact of industrial development on key wetlands. Proposed Mitigation Measure 21, restricts, to the extent feasible and prudent, the siting of facilities within one-half mile of the main Channel of the Colville River. Lessee Advisory 6a seasonally restricts aircraft overflights by an altitude of 1,500 feet and a lateral distance on one mile from identified brant, tundra swan, king eider, common eider, and yellow-billed loon nesting and brood rearing habitat.

See response to comments 2, 3, and 4 in the ADF&G letter of 3/5/97.

Recommend deleting caribou core calving areas from the proposed sale. At a minimum, special conditions should be developed for calving areas.

Caribou calving areas need not be deleted from leasing in order to ensure the long-term viability of herds. See response to USF&WS letter of 2/28/97. In addition to mitigation measures, permit stipulations may be applied to projects where there is a potential to affect calving caribou through the ACMP review process. Mitigation measure 8 states that pipelines shall be designed and constructed to avoid significant alteration of caribou and other large ungulate movement and migration patterns. At a minimum, above ground pipelines shall be elevated five feet, as measured from the ground to the bottom of the pipe, except where the pipeline intersects a road, pad, or a ramp installed to facilitate wildlife passage. ADNR may, after consultation with ADF&G, require additional measures to mitigate impacts to wildlife movement and migration. Under Lessee Advisory 6b, all aircraft should maintain an altitude of greater than 1,500 feet or a lateral distance of one mile, excluding takeoffs and landings, from caribou and muskoxen concentrations. Under Lessee Advisory 10, lessees are encouraged in planning and design activities to consider the recommendations for oil field design and operations contained in the final report to the Alaska Caribou Steering Committee: Cronin, M. et al, 1994. "Mitigation of the Effects of Oil Field Development and Transportation Corridors on Caribou." As stated in Mitigation Measure 8, special conditions may be developed to mitigate adverse effects on calving caribou at the plan of operations stage.

National Park Service, R. Barbee, 7/3/95

The lease sale abuts the boundaries of Gates of the Arctic National Park and Preserve. Oil and gas operations are incompatible with the purposed for which the park was developed.

The sale area no longer abuts the boundaries of Gates of the Arctic National Park and Preserve.

U.S. Department of Energy, L. Coburn, 6/22/95

Sale 87 and subsequent offerings could play an instrumental role in the development of other North Slope oil and gas resources. Successful oil and gas exploration and development could contribute to the extended operation of the Trans-Alaska Pipeline. Alaska oil plays a significant role in the world-wide oil market and provides high-quality, high-wage jobs.

The effects of the proposed sale on the state and local economy are discussed in "Chapter Five."

Local Government

North Slope Borough, J. Kaleak, 8/21/92

There is a lack of comprehensive planning for the state lands involved in Sale 87. It appears that ADNR is managing state lands on the North Slope for a single purpose, the extraction of oil and gas resources. We recommend ADNR schedule and budget for a comprehensive land use planning process.

ADNR has not completed an area plan for the North Slope and one is not scheduled for the near future. Ideally, we would have regional plans in place for all state land, including the North Slope. Planning resources are limited so the department has focused past planning in areas with the greatest conflicts, in areas with the largest blocks of state land, and where other ADNR processes do not adequately address uses of state land. Regional plans do not provide detailed guidelines for oil and gas development. ADNR has relied on the oil and gas leasing process and the NSBCMP to establish such guidelines. This process is better able to deal with the specific issues related to oil and gas exploration, development and production. Also, because these guidelines can be revised for each sale, they are able to address new information and technology. Under AS 38.05.035(e) the Director must prepare a best interest finding which is a written analysis that describes for the public the facts and applicable law which are relevant to the disposal and gives a decision based on these factors. If the proposed activity occurs in a coastal area, AS 46.40 requires that the activity be consistent with the ACMP which includes the NSBCMP. Among the topics that must be considered in a best interest finding are: fish and wildlife species and their habitats in the area; the current and projected uses in the area, including uses and value of fish and wildlife; the reasonably foreseeable cumulative effects of oil and gas exploration, development, production, and transportation on the sale area, including effects on subsistence uses, fish and wildlife habitat and populations and their uses, and historic and cultural resources; lease stipulations and mitigation measures, including any measures to prevent and mitigate releases of oil and hazardous substances, to be included in the leases, and a discussion of the protections offered by these measures.

Oil and support service industries

Alaska Oil and Gas Association, J. Brady, 6/20/95

AOGA supports regularly scheduled lease sales in the area covered by Sale 87; in particular the area north of 70 degrees latitude. This area is near existing infrastructure. We strongly encourage ADNR to offer this area for lease at least once an year. The southern portion of the sale area is a frontier area of relatively low industry interest and could be more efficiently developed through an exploration license.

It is the intent of ADNR to offer the acreage included in this preliminary best interest finding each year, for 10 years, until a new finding is required. AS 38.05.131 prohibits the issuance of an exploration license on land north of the Umiat baseline (approximately 69° 30' N). Once a lease sale is held in the area south of the Umiat baseline (currently scheduled for 2001) that area will be available for exploration licensing.

ARCO Alaska Inc., James M. Davis, 8/21/92

Supports the proposed lease sale and regular scheduling of future sales. Concerned about the trend toward restrictive lease stipulations and plan of operations permits. Decisions on new leasing in Alaska should acknowledge that oil and gas exploration and production have coexisted with environmental values and other uses for over 30 years. Stipulations should respect wildlife and habitat values and other uses without placing an unreasonable burden on environmentally responsible exploration and development.

The mitigation measures presented in this preliminary best interest finding were developed after considering stipulations and terms imposed in other North Slope oil and gas lease sales (Sales 50, 52, 65, 68, 80, 86, and recent comments and testimony on OCS Sale 144); fish and wildlife resource and harvest data submitted by ADF&G; environmental data relating to air and water quality, solid and liquid waste disposal, and oil spills submitted by ADEC. Measures were also developed or modified after considering comments submitted by the public, industry, federal and state agencies, and local government pertaining to this sale. Additional project-specific mitigation measures will be imposed if and when oil and gas lessees submit plans of exploration, operation, or development. Information to lessees relevant to proposed Sale 86 is also presented in the "lessee advisories," section. This section contains important information to lessees and operators regarding the proposed Sale 86 area. It also includes precautions which may apply to post-lease sale activities, and reflect existing local, state, and federal law or policy at the time of the sale. Proposed mitigation measures reflect a balance between environmental and subsistence access concerns, and practical constraints of exploration and development technology.

ARCO Alaska Inc., R. Strode, 6/28/95

ARCO supports regularly scheduled lease sales in the area covered by Sale 87; in particular the area north of 70 degrees latitude. This area is near existing infrastructure and highly competitive. We strongly encourage ADNIR to offer this area for lease at least once an year. The southern portion of the sale area is a frontier area of relatively low industry interest and could be more efficiently developed through an exploration license.

Comment noted. See response to AOGA letter of 6/20/95

BP Exploration, E. Zselezky, 8/17/92

BP encourages the frequent scheduling of lease sales by the state of Alaska.

Comment noted.

Phillips Petroleum Company, B. Butterfield, 8/17/92

Supports a timely and regular schedule of lease sales. DO&G should continue its efforts to protect the environment and work with those who feel that oil and gas exploration and development are detrimental.

Comment noted. Proposed mitigation measures are designed to ensure post-sale activities do not adversely impact the environment or result in conflicts between user groups.

Union Texas Petroleum Alaska Corporation, B. Hamilton, 11/1/96

Supports the adherence to a predictable leasing schedule which fosters competition and enables industry to justify the allocation of staff, technology, and expense to evaluate prospective tracts.

Comment noted.

Union Texas Petroleum Alaska Corporation, E. Williams, 6/30/95

Supports proposed Sale 87 as scheduled. Offering these lands on schedule will minimize the costs of delay and will allow for the orderly exploration of state lands.

Comment noted.

Others

Alaska Eskimo Whaling Commission, M. Ahmogogak, 11/20/96

The AEWC has a concern related to impacts resulting from an oil spill. If an oil spill occurs and goes out into the ocean, it will flow directly out to the migration corridor of the bowhead whale. The state should work with local residents to ensure that activities are conducted in a way that is consistent with the interests of the residents of the North Slope.

The likelihood of a large onshore oil spill flowing into the ocean and impacting bowhead whales is very small and has never occurred in over thirty years of North Slope exploration and development. However, the possibility, though very unlikely, does exist and must be addressed. A number of mitigation measures have been adopted to minimize the potential of a large oil spill from a well blowout or pipeline rupture from reaching the Beaufort Sea. Proposed Mitigation Measure 7a requires that pipelines be located so as to facilitate the containment and cleanup of spilled hydrocarbons. Proposed Lessee Advisory 8 requires impermeable lining and diking, or equivalent measures such as double walled-tanks for onshore oil storage facilities. Proposed Mitigation Measure 14b requires lessees to consult with the NSB and AEWC to discuss potential conflicts with the siting, timing, and methods of proposed operations and safeguards or mitigating measures which could be implemented. Proposed Mitigation Measure 21 prohibits the siting of facilities within one-half mile of the banks of the main channel of the Colville, Canning and Sagavanirktok, Kavik, Shaviovik, Kadleroshilik, Echooka, Ivishak, Kuparuk, Toolik, Anaktuvuk and Chandler Rivers and within 500 feet of fishbearing streams, to the extent feasible and prudent. Onshore oil spills are much easier to contain and clean up than offshore spills. Therefore, it is important to contain onshore spills before they reach water. Chapter Six of the Finding includes a discussion of oil spill response issues. State and federal laws require response equipment to be immediately accessible and require operators to prepare an extensive oil spill contingency plan prior to beginning their activities. Spill prevention is extremely important, and one section of the spill contingency plan for each project contains a description of prevention measures that will be used for that project. One prevention device is the blowout prevention equipment that each well must have.

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